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FORSYTH'S TREATISE
ON THE
CULTURE AND MANAGEMENT
OF
FRUIT TREES.

George Secker

A
TREATISE
ON THE
CULTURE AND MANAGEMENT
OF
FRUIT-TREES;

IN WHICH
A NEW METHOD OF PRUNING AND TRAINING
IS FULLY DESCRIBED.

TO WHICH IS ADDED,
A NEW AND IMPROVED EDITION OF
"OBSERVATIONS ON THE DISEASES, DEFECTS,
AND INJURIES, IN ALL KINDS OF FRUIT
AND FOREST TREES:"
WITH AN ACCOUNT OF A
PARTICULAR METHOD OF CURE,
PUBLISHED BY ORDER OF GOVERNMENT.

BY
WILLIAM FORSYTH, F.A.S. AND F.S.A.
GARDENER TO HIS MAJESTY AT KENSINGTON AND ST.
JAMES'S, MEMBER OF THE ŒCONOMICAL SOCIETY
AT ST. PETERSBURG, &c. &c.

THE SECOND EDITION, WITH ADDITIONS.

LONDON:
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AND J. DEBRETT, PICCADILLY.

1803.

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TO THE KING.

SIRE,

IT is now upwards of ſeventeen years ſince Your Majeſty did me the honour to appoint me Your Gardener at Kenſington and St. James's; during which time I have made a great variety of experiments on Fruit and Foreſt Trees, and introduced the mode of Pruning and Training recommended in the following Treatiſe.

Your Majeſty has, at different times, graciouſly condeſcended to examine the proceſs, and been pleaſed to expreſs Your approbation of the Improvements in ſuch favourable terms, as have cauſed my heart to overflow with unſpeakable pleaſure.

Such encouragement from my Royal Maſter has ſtimulated me to proceed with ſo much alacrity and perſeverance, as to overcome every difficulty that oppoſed me, and to bring the ſubjects treated of in this Volume to ſuch a ſtate of perfection as will, I flatter myſelf, in ſome meaſure render it worthy of Your Majeſty's Patronage.

Permit me then, Sire, with the moſt profound humility to lay this Work at Your Majeſty's feet; and thus publickly to acknowledge my gratitude to the beſt of Sovereigns, and the beſt of Maſters, for the innumerable bleſſings which under Him I enjoy, both as a Subject and a Servant.

That Your Majeſty may long live to patronize the Arts and Sciences, and to reign over a loyal, brave, and happy People, is the daily prayer of,

Your Majeſty's

Moſt grateful

And moſt devoted

Humble Servant,

WILLIAM FORSYTH.

PREFACE.

TO the many Publications that have appeared on the Management of Fruit and Foreſt Trees, it may be thought ſuperfluous to add; and, indeed, ſo little am I accuſtomed to the practice of writing, that I feel no ſmall degree of reluctance in offering any thing to public inſpection; but an entire conviction of the advantages to be derived from the obſervations and directions contained in the following pages, joined to the importunity of many of the moſt competent judges, has determined me to make my method of pruning and training, and the ſucceſs attending it, as public as poſſible.

Having long obſerved the ſcanty crops both on wall and ſtandard trees that have followed the uſual mode of pruning and training, I was led to make many experiments, in order to diſcover, if it were poſſible, a more ſucceſsful method. Nor have my endeavours been in vain; for, after following a new mode for ſeveral years, I can with pleaſure affirm, that the quantity of fruit has been remarkably increaſed, and the quality greatly improved.

I have in the following pages ſtated many facts, to evince the utility of the Compoſition recommended, and to induce others to make a fair trial, which may be done at a very trifling expence.

I only requeſt of thoſe who entertain any doubts, that they will make choice of two trees of the ſame kind, as near as may be in the ſame ſtate of health or decay, and having equal advantages of ſoil and ſituation; let the dead, decayed, and injured parts be cut out; then to one of the trees apply the Compoſition as directed in this Treatiſe, and leave the other to Nature: if proper attention be paid to the former, no great length of time will be neceſſary to ſhew which method ought to be purſued in future.

I hope the candid reader will pardon me for dwelling a little on this ſubject. It has been ſaid, that there is nothing new either in the Compoſition or its application. It is certainly true, that Compoſitions of various kinds have been tried; but no one has been attended with ſuch great ſucceſs as that which is deſcribed in the following pages: indeed, they were generally made up in a ſlovenly manner, and applied without properly preparing the trees; ſo that little good could have been expected, even if the Compoſition had conſiſted of proper materials. In theſe particulars I am perſuaded, that every impartial perſon will acknowledge that I have made great improvement. Former Compoſitions have been made up of loam and cow or horſe-dung, of bees-wax, pitch, tar, chalk, roſin mixed with greaſe, gums, &c. It is granted, that ſuch as theſe may ſometimes be of uſe, but not in general; moſt of them being liable to become hard, and to crack and peel off. I have tried them all, with but very little ſucceſs. I have alſo tried a Compoſition of tarras (which is uſed as a cement for building under water): this alſo cracked and peeled off after it became hard. Some of theſe Compoſitions become ſo hard, that, inſtead of giving way to the new bark as it is produced, they cut and tear it, to the great injury of the tree.

The Compoſition which I recommend is not liable to theſe inconveniences; it poſſeſſes an abſorbent and adheſive quality, and is moreover of ſuch a nature as not in the leaſt to hurt the new and tender bark; for it eaſily gives way to it and to the new wood as they advance. On applying it to trees which contain a ſtrong acid, ſuch as Oaks, Apple-trees, Apricots, &c. when in-

infected with the canker, that diſeaſe may be ſeen oozing through the Compoſition and adhering to the outſide, like copper duſt, or ruſt of iron, and may be eaſily rubbed off with the hand. This appearance I never could obſerve on the application of any other Compoſition; which confirms my belief that it acts as a ſtrong ſtimulant.

When the wounds in fruit trees are ſo large as not to heal up in the courſe of a twelvemonth, I renew the Compoſition annually, which, on its application, invigorates the trees, and ſeems to have the ſame effect on them as a top-dreſſing of dung has on land.

I have been ſolicited by ſome of my friends to add a chapter on forcing Grapes, Peaches, and Nectarines; and to give a deſcription of a houſe for that purpoſe; but as it would ſwell the book to too great a ſize, and as the ſubject is fully treated of by many others, it ſeems unneceſſary to ſay any thing farther here, than juſt to obſerve, that the method of pruning and training recommended in this book is equally applicable to trees in a forcing-houſe as to thoſe on a natural wall. When Vines are trained ſtraight up the rafters of hot-houſes, they throw out a few eyes only at top, and all the reſt of the branch becomes naked; but when trained in a ſerpentine manner, they break equally.

Dwarf Peaches and Nectarines planted in the pits of forcing-houſes ſhould be trained horizontally; in which mode they will produce much more fruit than when they are trained fan-faſhion.

It muſt be obſerved, that the Directions, &c. in the following pages are calculated for the neighbourhood of London; it will, therefore, be neceſſary to make allowance, in other climates, for the earlineſs or lateneſs of their ſeaſons, both with regard to the time of fruit being in perfection, and alſo for planting, pruning, &c.

For the information of thoſe who are not acquainted with practical gardening, the following explanation of what is called *Heading-down* is given.

When young trees are planted out from the Nurſery, as ſoon as they begin to break in the Spring, they are cut down to three or four eyes, according to their ſtrength, to furniſh them with bearing wood: if this were not done, they would run up in long naked branches, and would not produce one quarter of the fruit which they do when this operation is properly performed. The ſame holds good in heading all kinds of old trees.

An opinion prevails, particularly in thoſe parts where Apple-trees are cultivated to any conſiderable extent, that trees never bear well after heading-down, and that it frequently kills them. This may, no doubt, happen when they are improperly headed-down all at once, by giving a ſudden check to the ſap, the few weak ſhoots not having ſtrength to draw up what is ſupplied by the roots; and moreover, not being capable of ſheltering one another, they are chilled by the cold, and ſo rendered at leaſt unproductive, if they are not totally killed. But if heading were done gradually, that is, if every other branch all over the tree were headed at a proper length, cutting as near to thoſe parts where the ſhoots appear as poſſible, in the month of February or March, or even as late as May, in the courſe of the Summer they would throw out fine long ſhoots. Theſe ſhould not be ſhortened the firſt year, unleſs it be neceſſary to ſhorten a few to fill up the head of the tree with bearing wood, and that ſhould be done in the following Spring; cutting them to ſix or eight inches long, according to their ſtrength. In the next Spring after the firſt branches are headed, the remaining old branches may be cut out; and theſe will ſoon fill the head of the tree with fine bearing wood. In three years, if properly managed, trees ſo headed will produce a much greater quantity of fruit and of a better quality than they did before the operation was performed.

PREFACE

TO THE

SECOND EDITION.

WHEN the firſt Edition of this Work appeared in print, it became certainly at once a candidate for public favour, and an object of profeſſional criticiſm. Its reception in the former character has been to me honourable and gratifying in the extreme *; and had Criticiſm exerciſed its talent with perſonal candour and liberality, its remarks on points of practice or hypotheſis ſhould have met with reſpect and attention from me; even though they had ſhown my poſitions to be erroneous: but its utmoſt ſeverity would not have extorted a word of *complaint*. Nor ſhall I now treſpaſs longer on the time or patience of the Reader, than briefly to reply to a few points, which tend to affect not ſo much my profeſſional reputation, as my perſonal character.

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* An impreſſion of 1500 copies, in 4to, having been ſold in little more than eight months.

Thomas Andrew Knight, Eſq. in a pamphlet lately publiſhed *, tells his readers, that he has "*ſuſpected* a *Combination* between Dr. Anderſon and Mr. Forſyth." To be *ſuſpicious*, is certainly not a quality that eaſily enters into the compoſition of a cultivated and an honourable mind; nor ought the ſerious charge of COMBINATION to be lightly made againſt men of fair repute.

"I believe," ſays Mr. Knight to Dr. Anderſon, "that you are actuated [that is, in having recommended Mr. Forſyth's Experiments at Kenſington] by ſome motive of *private intereſt*, with which the Public are not acquainted [but which, it ſeems, Mr. Knight was determined ſhould be no longer a ſecret]. Is Dr. Anderſon quite ſure, that he is not the concealed Writer, either wholly or in part, of his friend Mr. Forſyth's book, and the intended *ſharer of his Profits?* And has not Dr. Anderſon taken out a patent for a new kind of forcing-houſe,

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* Intituled, "Some Doubts relative to the Efficacy of Mr. Forſyth's Plaiſter in filling up the Holes in Trees, &c. aſcribed to it by Dr. Anderſon and Mr. Forſyth: In a Letter to Dr. Anderſon."

whoſe excellence his diſintereſted friend Mr. Forſyth *ſtands forward* to atteſt ?"

Now, conſidering that no part of the foregoing paragraph has any other foundation than in the creative fancy of Mr. Knight, the language in which it is conveyed does not appear to be quite ſo temperate, or ſo qualified, as might be expected from one Gentleman in addreſſing another.

Dr. Anderſon ſees, no doubt, in what manner it is proper for *him* to treat an inſinuation ſo illiberally made *.

For

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* The Doctor has ſince publickly invited Mr. Knight to an amicable arbitration, in the following manly terms :

" To T. A. Knight, Esq.

" Sir,

" When I was firſt told that you had publiſhed a Letter, addreſſed to me, on the ſubject of Mr. Forſyth's Treatment of Trees, I felt no anxiety concerning it, nor was at any pains to procure the book. I conceived that it was written by a Gentleman, and that of courſe it could contain nothing that was unbecoming one of that character to write ; and, as what we had both ſaid on that ſubject was before the Publick, I felt no difficulty in abiding the deciſion of that Publick concerning it. I am ſorry, however, to find, on reading your book of late, that I had been in a miſtake concerning you ; and that you had there publiſhed ſuch things as neceſſarily call upon me to take this public notice of them. It would be degrading the character I bear, however, For *myſelf*, it remains only to pledge, as I hereby do, my character as a Man graciouſly honoured in being the Servant of his Majeſty,—that the above ſuſpicions and inſinuations are abſolutely unfounded;—that Dr. Anderſon not only did not write one line of my book, but never ſaw my work till the MS. (compoſed entirely

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however, to multiply aſſertions unſupported by proofs, which might be contradicted in the ſame manner as I have experienced, without affording to the Publick any adequate means of diſcriminating truth from falſehood. In order to avoid this futile kind of altercation, and to elucidate the truth at once, without danger of error, I beg leave to propoſe, that when you next come to London (which I underſtand you uſually do once a year) you will be ſo candid as to appoint a day and hour when you will meet with me in Kenſington Gardens, accompanied by ſome Gentlemen of ſound underſtanding, who are capable of obſerving facts, and of drawing juſt concluſions from them; and if I ſhall then fail in proving to their full conviction, from undeniable evidence to be then produced, that you have publiſhed in that work unfounded and injurious calumnies, and that you have repreſented things in a manner very different from what, on a thorough examination, they will be found to be, I ſhall ſubmit to any puniſhment that theſe Gentlemen ſhall pleaſe to award, on the ſuppoſition that you previouſly agree to ſubmit to their award, ſhould the caſe be reverſed. This is the only anſwer that your book ſeems to claim from,

"JAS. ANDERSON.

"*Iſleworth, December* 20, 1802."

tirely by myſelf) was in a complete ſtate of preparation for the preſs, nor even read a page of it in that ſtate;—that the Doctor never was chargeable with ſuch abſurdity, as to expect or deſire to ſhare in the profits of a Publication, of which he had neither deſigned nor executed the ſmalleſt part;—and, that, ſo far from my having diſtinguiſhed myſelf on the ſubject of Dr. Anderſon's Patent for a forcing-houſe, the Doctor well knows, that motives of delicacy, more creditable to myſelf, perhaps, than pleaſing or candid towards him, made me reſolutely decline to do what, in any other circumſtances, would have been but a common act of juſtice and friendſhip. As to my having *ſtood forward to atteſt, &c.* I really know not in what part of my book, or where elſe, Mr. Knight can find that I have ſo done.

As to Mr. Knight's account of his Viſit to Kenſington Gardens, and his opinions of the Trees under experiment there (evidently viewed by him with an eye of prejudice), I ſhall contentedly leave them to operate as they may: not apprehending that I aſſume too much, when I ſay, that in my humble opinion, a perſon who (for an inſidious purpoſe) can "*affect total ignorance*" [theſe are his own words] on a ſubject which he at the ſame time *profeſſes fully to underſtand*, has little claim to notice either in anſwer or explanation *.

As to the fact mentioned by him, of my having pointed out a branch as being of three years' growth, which he perceived to be of five; thoſe who know any thing of the ſubject are aware, that the annual growth of timber is ſo regularly and ſo obviouſly marked by Nature, that I muſt have been ſtark mad to have attempted ſo futile an impoſition on any perſon who had the bleſſing of eye-ſight.

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* Mr. Knight's remark, of its being "more certain that I was paid for an important diſcovery, than that I made one," is, perhaps, more entitled to praiſe for its ingenuity, than for its civility toward the Noble Peers and Honourable Members of Parliament on whoſe examination and report to his Majeſty the reward was ordered to be granted (ſee p. 449 of this volume); and who were ſelected, as being the moſt competent judges of the ſubject that could be named in the kingdom;—if I may ſo ſay without offence to the judgment and experience of Mr. Knight.

His inſinuation, however, p. 13, "that I have ſupplied my Royal Maſter's table, by procuring fruits from Covent Garden market, and ſending them as the produce of Kenſington," I deſpiſe for its malignity, and yet muſt ſmile at for its abſurdity. Not an article of fruit is ever ſent to His Majeſty's table, that has not been previouſly entered in a book kept for the purpoſe; and the ſimple fact, that I muſt myſelf have borne the entire expence of ſuch ſuppoſed purchaſes from Covent Garden, or any other market, will not be thought a very ſtrong circumſtance in favour of the practice. The truth is, that I have never once, during my ſervitude at Kenſington, made, or had an idea of making, ſuch a purchaſe as Mr. K. alludes to.

In one part of his pamphlet, Mr. Knight has the following obſervation:

"That Mr. Forſyth may have trained up a young Shoot from the bottom of an old Tree that was partially hollow, and that ſuch a ſhoot may have made a good tree, is nothing wonderful; for the roots of almoſt all our grafted trees ſhow no diſpoſition to periſh with the graft or bud, which they nouriſh; and a ſhoot thus trained would certainly make, as I have often obſerved, as good a tree as any other of the ſame variety.—But ſome trees do not readily emit young ſhoots of this kind; and I ſhould like much to know how many Peach or Nectarine Trees died under Mr. Forſyth's proceſs of rendering them immortal."

I conſider myſelf much indebted to Mr. Knight for the very handſome compliment that he has here (unintentionally, it is true) paid to my practice. Could I be vain of any ſuch thing, I ſhould certainly be ſo of this; particularly as it comes from one who will not eaſily be ſuſpected of any intention to flatter. It alſo places my Compoſition in a much more conſpicuous light than that in which I ſhould otherwiſe, perhaps, have regarded it. I ſhall therefore anſwer him with pleaſure. From the manner in which the queſtion is put, it ſhould ſeem, Mr. Knight thinks that the operation of cutting over a decayed *Peach-tree* is of ſo dangerous a nature, as to render it impoſſible to prevent a large proportion of ſuch trees as have been cut over from dying. A great majority of thoſe Gardeners who have tried it, by *the common mode of practice*, will perhaps coincide with him in this opinion. But I can with ſatisfaction aſſure him, that from the time when I firſt applied my plaſter to ſuch wounded trees, which is now many years ſince, it eſcapes my recollection, and that of many others who have been conſtantly employed in the Royal Gardens at Kenſington, that a *ſingle tree*, either Apricot, Peach, or Nectarine, has died from being cut over, while *under my mode of management*; though that operation has on ſome occaſions been performed under circumſtances extremely unfavourable to its ſucceſs: in particular, four Trees, namely, three Peach and one Nectarine; which had been dug out of the ground and laid on a mould-heap, expoſed to the rigour of ſevere froſts, &c. Thoſe trees are now open to the view of Mr. Knight, or any other gentleman who may chooſe to inſpect them. I find, however, that it is not a few only of ſuch Trees that have been headed-in by me; for, upon an inveſtigation with a view to anſwer this queſtion, I numbered no fewer than ſixty Peach, Apricot, and Nectarine Trees, that have been ſo cut over and reſtored to a high ſtate of health and fruitfulneſs, and which are now in as flouriſhing a ſtate as I could wiſh trees of that ſort to be. Neither were theſe operations performed in ſecret, or with any view to concealment; but openly, under the eye and with the aſſiſtance of the Gardeners employed in the gardens, who have all had opportunities to obſerve the progreſs of the experiments. As to the idea of Mr. Knight, that if ſuch decayed trees have actually put forth new ſhoots at all, it muſt have been from the roots only, and from no other part;—the ſhort anſwer to this is, that he is under a great error; for every Gardener knows, that if this had been the caſe, the trees muſt all have been budded anew before they had come into bearing: Now the fact is, that none of thoſe trees have ever been budded again.

So far is the operation of budding in this inſtance unneceſſary, that I have been obliged to cut over ſome old trees, particularly one kind of Cherry (of the Heart ſpecies), in order to preſerve the kind that they bore, which could be obtained no where elſe, and which were paſt bearing in their old ſtate; but they have now plenty of young wood, and are in full bearing. I have, therefore, moſt certainly to thank Mr. Knight for having induced me to bring forward theſe ſtrong facts before the publick; which, but for him, I never ſhould have thought of doing.

From the ſame conſideration, I ſhall look forward with pleaſure to the proſpect of having other facts of a ſimilar nature inveſtigated upon the ſpot, by gentlemen who will not be ſuſpected of partiality to me, under the watchful care and guidance of Mr. Knight, at a meeting propoſed by Dr. Anderſon; and which I hope nothing will prevent from taking place. The more minute the inveſtigation may be, it will in the reſult, as in the above inſtance, be the more ſatisfactory to me.

I think it but reſpectful to my Readers, and a juſtice to myſelf, to declare, that the *Contents of the following Work are ſolely the reſult of my own practice and experiment* *; every ſingle remark having been minuted down at the moment of its occurring, and only retained afterwards on my aſcertaining, by due proof, that it was well founded and accurate. Of Books I have never availed myſelf, farther than as they might tend to aſſiſt in perfecting my Catalogues of Fruits; for at a time when I did once begin to read with a view to the improvement of my practice, I ſoon found myſelf more bewildered than inſtructed, and have never ſince reſumed the taſk.

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* With the exception only of ſome remarks on the common mode of grafting, which I have avowedly taken from Miller, for the purpoſe of ſhewing how it is improved.

To conclude: After acknowledging, with the deepeſt ſenſations of gratitude, the candour and kindneſs of a generous Publick, I ſhall, from this moment, ceaſe to notice any ſimilar attacks from Mr. Knight, or any other quarter: contenting myſelf with oppoſing, to the ungenerous, unjuſt, and unprovoked charges of an individual, a few only of the *voluntary* teſtimonies of Gentlemen of diſtinguiſhed honour and indubitable veracity, with which I have been favoured *.

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* See the Letters from Dr. Guthrie, Mr. Marten, Mr. Wedgwood, and Mr. Davis, p. 476 to 484: teſtimonies which, could it be thought neceſſary, I might corroborate by the inſertion of at leaſt 50 others, from Gentlemen of the firſt practical knowledge in the kingdom: the more flattering, as moſt of the writers were entire ſtrangers to me.

A
TREATISE
ON THE
CULTURE AND MANAGEMENT
OF
FRUIT TREES, &c.

CHAPTER I.

OF APRICOTS*.

Different Sorts described—Planting and Heading—The Management of decayed Trees—Pruning of Apricots, and how to shelter them from Cold.

THE Apricot, we are told, came originally from Armenia, whence it takes the name of Armeniaca, and was cultivated in this country in 1562.

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* We ſhall enumerate, under their reſpective heads, the principal ſorts of fruit that are propagated in this country; with the time of their ripening, as near as poſſible. It is to be obſerved, however, that the diverſity of ſeaſons, together with that of ſoil and ſituation, will ſometimes make a month of difference in the ripening of the fruit.

Linnæus, according to the Sexual Syſtem, arranges it in the twelfth claſs, Icoſandria Monogynia*; and comprehends in the genus Prunus, the Apricot, the Cherry, and the Bird-Cherry; making them only different ſpecies of the ſame genus.

Although the above-mentioned plants are arranged under the ſame genus, yet the Cherry and Plum will never take upon each other, nor the Apricot upon the Cherry; but the Apricot will take upon all ſorts of Plums, except the Bruſſels.

The Names and Qualities of Apricots commonly cultivated in England, with the Time of their Ripening.

1. The Maſculine. This is a ſmall roundiſh fruit. It is the earlieſt of all the apricots, ripening about the latter end of July; and is chiefly eſteemed for its tart taſte. When fully ripe, it is of a red colour towards the ſun, and of a greeniſh yellow on the other ſide.

2. The Orange. This is pretty large, but rather dry and inſipid, and fitter for tarts than for the table. It is of a deep yellow colour

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* Moſt of our eatable fruits are arranged under this claſs; and it is remarkable, that there is not one poiſonous fruit to be found in it.

when ripe, which is about the latter end of Auguſt. This is conſidered as the beſt for preſerving.

3. The Algiers. This is a flatted oval-ſhaped fruit, of a ſtraw colour, juicy, and high-flavoured. It ripens about the middle of Auguſt.

4. The Roman. This is larger than the Algiers, rounder, of a deep yellow, and not quite ſo juicy. It is ripe about the middle or latter end of Auguſt.

5. The Turkey. This is larger, and of a deeper colour, than the Roman; its ſhape more globular, and the fleſh firmer and drier. It ripens about the latter end of Auguſt.

6. The Breda (brought from thence to England) is originally from Africa. It is large, round, and of a deep yellow colour; the fleſh is ſoft and juicy. This is an excellent fruit, eſpecially if ripened on a ſtandard. It ripens about the latter end of Auguſt.

7. The Bruſſels. This is held in very great eſteem on account of its bearing ſo well on ſtandards, or large dwarfs. It is of a middling ſize, red towards the ſun, with many dark ſpots; and of a greeniſh yellow on the other ſide. This has a briſk flavour, is not liable to be mealy or doughy, and is preferred by many to the Breda; but when the Breda is planted

as a ſtandard, the fruit is more juicy and of a richer flavour. This ripens in Auguſt on a wall, but not before the latter end of September on ſtandards.

8. The Moor Park, called alſo Anſon's, Temple's, and Dunmore's Breda. This is a fine fruit, and ripens about the latter end of Auguſt.

9. The Peach Apricot. This was introduced from Paris, by his Grace the Duke of Northumberland, at Sion-houſe, in 1767. It is the fineſt and largeſt of all Apricots, and is generally thought to be the ſame as the Moor-Park; but upon a minute examination the leaves will be found to differ. It ripens in Auguſt.

10. The Black Apricot. This has been very lately introduced, by Sir Joſeph Banks, from France, in which country it is highly eſteemed.

The trees that Sir Joſeph planted in his gardens at Spring Grove, near Hounſlow, bore fruit laſt ſeaſon, for the firſt time in this country; but, in conſequence of the wet and unfavourable weather, it did not arrive at perfection *. It ripens about the ſecond week in Auguſt.

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* Since writing the above, I have had the honour of paying Sir Joſeph a viſit at Spring Grove, where I had the

To the foregoing may be added:

The Great Apricot.
Holland Apricot.
Provence Apricot.
Alberge.
Angumoiſe.
Blotched-leaved.
Nancy Apricot, (a fine large fruit.)

The Dutch Apricot.
Grover's Breda.
Perſian.
Royal Orange.
Tranſparent.
Portugal Apricot, (a ſmall fruit.)

For the accommodation of thoſe who have ſmall gardens, and yet wiſh to have a regular ſucceſſion of fruit, we ſhall give abſtracts of the

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pleaſure of taſting one of theſe Apricots; and I think it will prove an acquiſition well worth cultivating. The black colour of the fruit may, perhaps, prejudice ſome perſons againſt it; but the flavour, in my opinion, is very good; and if it be conſidered, that the wood of 1799 was not well ripened, owing to the wet ſeaſon, there is little doubt, that, next year, if the ſeaſon ſhould be favourable, the flavour of the fruit will be greatly improved, and continue improving till the tree comes to maturity. The ſcantineſs of the preſent crop of Apricots, Peaches, Nectarines, &c. may be attributed to the wood not being properly ripened laſt year.

In Mayer's "Pomona Franconica," will be found a very good figure of the Black Apricot, called alſo the Alexandrian Apricot.

larger ſelections; retaining thoſe kinds only which are beſt adapted for that purpoſe; and of which one or more trees of a ſort may be planted, according to the ſize of the garden, or the demand of the family.

A Selection of Apricots for a small Garden.

The Maſculine; the Roman; the Orange; the Breda; and the Moor Park.

Of the Planting, Pruning, and Training of Apricots.

The beſt time for planting Apricots is in Autumn, as ſoon as the leaf begins to fall. The perſon who goes to the nurſery for the plants ſhould make choice of thoſe which have the ſtrongeſt and cleaneſt ſtems; and if he can procure ſuch as have been headed down, (to uſe the phraſe of the nurſerymen) of two or three years growth, they will bear and fill the walls much ſooner than thoſe which have not been ſo treated. He ſhould make choice of trees with one ſtem; or, if they have two, one of them ſhould be cut off; for by planting thoſe with two ſtems the middle of the tree is left naked, and, of courſe, one third of the wall remains uncovered.

I know that it is the practice of many to make choice of trees with the ſmalleſt ſtems; but theſe always produce weaker ſhoots than the others.

On preparing the Borders.

If the borders wherein the trees are to be planted be new, they ſhould be made two feet and a half or three feet deep, of good light freſh loam. If the trees are to be planted in old borders, where the earth has been injured by the roots of the former trees, it will be neceſſary to take out the old mould at leaſt three feet deep, and four feet wide, filling up the hole with freſh loam, and taking care to plant the trees about eight inches higher than the level of the old border, to allow for the ſinking of the earth, that they may not be too deep in the ground: but this will be more fully treated of in the chapter on Pear-trees.

When the trees are planted, they ſhould by no means be headed down till the month of April, or May, when they begin to throw out freſh ſhoots. Strong trees ſhould be cut a foot from the ground; and thoſe that are weak, about half that length.

In backward ſeaſons, they ſhould not be headed down ſo early; never until the buds are fairly broken; always obſerving to cut ſloping towards the wall, and as near to an eye as poſſible, that the young leading ſhoot may cover the cut; [*See* PLATE I. *Fig.* 1.] which operation ſhould be again performed in the next March or April. The ſhoots that are then thrown out muſt be trained horizontally, to cover the wall. The number of theſe to be left ought to be from three to ſix on each ſide, according to the ſtrength of the main ſhoot; taking care to rub off, with the finger and thumb, the fore-right ſhoots all over the tree, except a few which may be wanted to fill up the wall, near the body of it. [*See* PLATE I. *Fig.* 1.]

In the ſecond year, the horizontal ſhoots muſt be ſhortened in the ſame manner, according to their growth; and ſo on every year till the wall ſhall be completely covered from top to bottom.

It is a frequent practice with ſome gardeners, to head down the trees at the time of planting; which very often proves fatal to them.

Of old and decayed Trees.

It has been the general practice to train wall-trees in the form of a fan, which occaſions the ſap to riſe too freely to the top, leaving the

lower

lower part almoſt naked; ſo that ſcarcely one quarter of the wall is covered with bearing wood.

In that caſe, it will be neceſſary to cut down the whole of the tree, as near to the place where it was budded as poſſible; remembering always to cut it at an eye or a joint. If there ſhould be any young ſhoots on the lower part of the tree, it will be proper to leave them, training them horizontally, which will check the flow of the ſap, and thereby render them much more fruitful.

Very frequently, when large branches have been cut off in a careleſs manner, and the wounds left to nature, the whole tree is infected with the gum and canker; which, if not checked, will in a ſhort time totally ruin it.

The beſt remedy in this caſe is, carefully to pare off the cankered part of the bark with a draw knife, or other convenient inſtrument. You will frequently find the white inner bark infected, which muſt alſo be cut away, till no appearance of infection remains; this may be eaſily known by the brown or black ſpots, like dots made with a pen, of which not one muſt be ſuffered to remain.

All the branches ſo cut and pared ſhould be immediately covered with the Compoſition in a liquid ſtate; the preparation and application of which will be particularly deſcribed in another place.

As we ſometimes ſee walls with all the trees infected, it will in that caſe be moſt prudent to cut every other tree, leaving the reſt for a ſupply of fruit till thoſe which are cut begin to bear; this will be in the ſecond or third year.

When trees are in a very bad condition, they ſhould be cut in a partial manner, taking off the worſt branches firſt, particularly thoſe in the middle of the tree, always cutting as near to the graft as poſſible; or every other branch may at firſt be taken out, leaving the reſt to bear; by which means there will be a ſupply of fruit while the other parts of the tree are renovating. It ſhould be remembered, however, that all the cankered bark muſt be cut off without loſs of time; otherwiſe the new wood will be infected.

Old trees thus headed down will ſometimes throw out very ſtrong and vigorous ſhoots, which it may be neceſſary to top, as it will cauſe them to throw out ſide-ſhoots, and ſoon fill up the wall with fine bearing wood; but they ſhould never be ſuffered to have any foreright ſpurs, except little dugs. The topping ſhould be done in the beginning of June, which will cauſe the tree to produce fine bearing wood for the next year. Thoſe trees muſt be pruned in March following, ſhortening the ſhoots from fifteen to ſix inches, but according to their ſtrength, always leaving the ſtrongeſt ſhoots longeſt.

Wherever the knife has been uſed, the Compoſition muſt be immediately applied.

After the fall of the leaf, it will be proper to unnail the young ſhoots, leaving only a few to prevent the tree from being broken by the wind. By this method they will be more expoſed to the ſun and air, which will ripen and harden the wood much more ſpeedily than if they be left nailed.

I have a great diſlike to Autumnal pruning of fruit trees; of all kinds of ſtone-fruit in particular; for by pruning at that ſeaſon you ſeldom fail to bring on the canker; and no fruit trees are more liable to this diſeaſe than the Apricot. The reaſon is obvious: the great acidity in theſe trees, the expoſure of the wounds, and the dormant ſtate of the ſap, prediſpoſe to mortification; whereas, in ſpring, when the ſap is beginning to flow, and will follow the knife, the lips will quickly grow. If the branches are ſmall, a freſh bark and freſh wood will in one ſeaſon completely cover the wound; but if large, a time proportionate to their ſize will be occupied; this proceſs, however, is manifeſtly much accelerated by the application of the Compoſition, which excludes the air and wet from the air and ſap veſſels of the tree.

It may now be proper to give a few directions for covering Apricots, to prevent the bloſſom from being deſtroyed by froſts, cutting winds, &c.

In ſevere weather, they ought to be covered before the flowers begin to expand; for I have often ſeen the bloſſoms drop off before they opened.

The beſt covering is old fiſh-nets, which ſhould be put on three-fold; and if a few branches of dry fern are ſtuck in among the branches before the nets are put on, they will aſſiſt greatly in breaking the force of the high winds. It is a common practice, to cover with mats in the night, and to take them off in the day; but this, by frequently expoſing the trees to the cutting winds, does more harm than good. Another practice is, to cover with branches of ſpruce-fir and yew; but theſe, being too cloſe, encourage a blight, and cauſe the leaves of the trees to curl, and the ſhoots to break very weak; whereas the nets admit a free circulation of the air, and at the ſame time break the force of the wind. When it happens to rain or ſnow in the forepart of the night, and freeze towards the morning, we find the drops hanging in icicles on the meſhes, while the tree is almoſt dry.

When the ſhoots become pretty long, and the leaves expand to cover the fruit, it will be neceſſary to keep the net clear from the tree, by placing forked ſticks, from ſix inches to a foot long, between it and the wall; this will prevent the ſhoots and leaves from growing through the net. The forked end of the ſticks ſhould reſt againſt the meſhes of the net.

A few trees for an early ſupply may be planted on a South aſpect, according to the ſize of the garden, and the demand there may be for the ſupply of the family; but a Weſt aſpect is far preferable for the general crop. Thoſe who wiſh for a late ſupply may have ſome trees planted on an Eaſt aſpect.

The Breda is the beſt and the richeſt-flavoured for a ſtandard, although the Bruſſels is frequently preferred; but I would by no means recommend planting more than three trees of each ſort in a garden, as ſtandards; as it is not one year in ten that a tolerable crop is produced from them.

The Breda, the Bruſſels, and the Moor-Park, ſhould always be planted on an Eaſt or Weſt aſpect.

CHAPTER II.

OF PLUMS.

Different Sorts of Plums cultivated in England—Of Plant-heading and Training them—Of Standards in Orchards, and Dwarfs in Gardens—The Management of old decayed Trees.

THE Plum is generally ſuppoſed to be a native of Aſia, and the Damaſcene to take its name from Damaſcus, a city of Syria.

This genus of plants is arranged by Linnæus in the twelfth claſs of his Syſtem.

The Names and Qualities of those Plums which are commonly cultivated in England, with their Time of ripening.

1. The Jaunhative, or White Primordian, is a ſmall plum, of a yellow colour, and mealy. It ripens in the latter end of July, or beginning of Auguſt. One tree will be ſufficient for a garden.

2. The Early Damaſk, commonly called the Morocco Plum, is middle-ſized, and the fleſh good. It ripens about the beginning of Auguſt.

3. The Little Black Damaſk Plum is a rich fruit, a good bearer, and is ripe about the latter end of Auguſt.

4. The Great Damaſk Violet of Tours. This is a fine rich plum of a bluiſh colour, and is ripe in Auguſt.

5. The Red Orleans Plum is large, of a rich juice, and is ripe in the latter end of Auguſt.

6. The Fotheringham is an excellent plum, of a dark red, and the juice rich; there is hardly any plum that excels it.

7. The blue Perdrigon is of a very good taſte, and ripens in Auguſt.

8. The white Perdrigon Plum is a pretty good fruit, and has a ſweetiſh taſte mixed with tartneſs. It ripens in the beginning of September.

9. The red Imperial Plum, or red Bonum Magnum, is a great bearer, and moſtly uſed for baking. It is ripe about the latter end of September.

10. The white Imperial Bonum Magnum, or Egg Plum, White Holland, or Mogul Plum, is a large fruit, and, like the red, moſtly uſed

for baking. This is a great bearer, and ripens about the beginning of October.

11. La Royal is a fine plum, equal to the Green Gage, but a ſhy bearer. It is of a red colour, and ripens in the latter end of September.

12. Little Queen Claudia is a ſmall rich fruit, ripe in September.

13. Large Queen Claudia, or Dauphiny. This is an excellent plum, of a yellowiſh green, and ripens about the beginning of October.

14. The Green Gage Plum * is of an exquiſite taſte, and eats like a ſweetmeat. Its colour and ſize ſufficiently diſtinguiſh it from any other. It ripens in Auguſt and September.

15. Drap d'Or is a good plum, and a plentiful bearer. It is ripe about the latter end of September.

16. The Cheſter Plum is rich, and a great bearer. It is ripe about the latter end of September.

17. The Apricot Plum is large and ſweet, and is ripe in the beginning of October.

18. The Maître Claud is a large round whitiſh plum; the juice is very briſk, though ſweet. It is accounted among the beſt white plums that

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* There are ſeveral varieties of this plum, and all good.

we have, and ripens about the beginning of October.

19. The Myrobalans, or Cherry Plum, is a middle-ſized ſweet fruit, and ripens about the beginning of September. This plum is frequently planted for ornament, as it bloſſoms early.

20. La Mirabelle, of an amber colour, and ſmall, is full of juice, and excellent for ſweetmeats. It bears well, and is ripe about the beginning of September.

21. The Brignole Plum. This is eſteemed the beſt plum of any for ſweetmeats; the fleſh is dry, but of a rich flavour. It is ripe about the latter end of September.

22. The red Diaper Plum is large, and of a very high flavour. It ripens about the beginning of September.

23. The Saint Catharine Plum is one of the beſt, and is much uſed for confectionary; it is alſo very good for the table, having a rich ſweet juice; and is a good bearer, hanging the longeſt of any upon the tree. I have had them in gathering ſix weeks. It ripens about the latter end of September.

24. The Imperatrice, or Empreſs Plum, has an agreeable flavour, and ripens about the middle of October. This is one of the lateſt plums,

and ſhould not be gathered till it begins to ſhrivel; it will then eat like a ſweetmeat, and make a great addition to the table in the latter end of October and beginning of November.

25. Monſieur's, or the Wentworth Plum, is a large fruit reſembling the Bonum Magnum. It ripens about the beginning of October, and is good for preſerving, but too ſharp to be eaten raw.

26. The Wineſour, a Yorkſhire plum, is one of the beſt for preſerving. It is ripe in October.

27. The Damſon Plum, a fine large ſort of Damſon from Shropſhire, raiſed from ſuckers or ſtones, is an abundant bearer, of a rich flavour, and is good for baking or preſerving. It ripens in the latter end of September, and continues till near the latter end of October.

To the above may be added:

Admirable.
Black Damaſcene.
Black Pear.
Blue Matchleſs.
Damas noir de Tours.
Don Carlos's.
Double-flowered.
Early blue Primordian.
Early red Primordian.
Early Amber.
Early Tours, or Precoce de Tours.
Early Violet.
Early Orleans.
Fine Early Plum.
Jacinthe, or Hyacinth.

Koa's Imperial.
La Prune Suiſſe.
La Prune valeur Valentia.
Matchleſs.
Maugeron.
Muſcle.
Perſian.
Red Queen Mother.
Royal Pea.
Royal Dauphin.
St. Julian.
Semina.
Small White Damaſcene.
Spaniſh Damaſcene.
Striped-leaved.
True Prune.
Verte-dock, or Verdock.
Whitton, or Nutmeg.
White Bullace.
White Orleans.
White Pear.
White Perdrigon.

A Selection of Plums for a small Garden.

The Jaunhative; Early Damaſk; the Orleans; La Royal; Green Gage (different ſorts); Drap d'Or; Saint Catharine; and Imperatrice. The Magnum Bonum for baking; and the Wineſour for preſerving.

On the Choice, Planting, Pruning, &c. of Plum-Trees.

When you chooſe your trees, let the ſame directions be obſerved as in the choice of Apricots. Chooſe clean ſtraight plants with ſingle ſtems; as thoſe with two never make handſome trees either for walls or ſtandards. Manage the border as before directed for Apricots; digging the holes the ſame width and depth, and looſening the bottom; then fill up the holes with fine freſh loam, or the mould that was uſed the preceding year for melon and cucumber beds; and be careful to keep the mould a proper height above the border, and the roots of your trees as near the ſurface as poſſible, ſpreading them horizontally. If there are any tap-roots, they ſhould always be cut off, as ſhould alſo the fine hairy roots, as they are liable to get mouldy and rot, and thereby bring on a putrefaction of the mould about the root of the tree. If the roots are not ſpread near the ſurface of the ground, it will prevent the ſun and air from penetrating to them; and the fruit, of courſe, will not have ſo fine a flavour.

Never cut the ſtems of young plum-trees when firſt planted, but leave them till the buds begin to break; then you may head them down to five or more eyes, always obſerving to leave an odd one for the leading ſhoot: remember to cut ſloping towards the wall, and as near to an eye as poſſible. Thus managed, the ſhoots will ſoon fill the wall with fine wood. If you find that ſome of the ſhoots are too luxuriant, you may pinch the tops off with your finger

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and thumb, about the beginning of June in the firſt year after planting; by doing which you will obtain plenty of wood to fill the bottom of the wall. A great deal depends on the firſt and ſecond year's management of your trees.

The diſtance from each other at which plum-trees ſhould be planted againſt a wall depends on the height of the wall. If the wall be ten feet high, which is the common height, they may be planted at eight yards diſtance from tree to tree; but if the wall be twelve feet high, or more, ſeven yards will be ſufficient. For my part, I prefer a wall of ten or twelve feet, which will be found high enough, if the branches are trained horizontally; by which means your trees will be much more fruitful, and not grow ſo luxuriantly.

By training an upright ſhoot on your Plums, as directed for Pears, you will get fine kind ſhoots from the ſides. The leading ſhoot ſhould be ſhortened, leaving it from one to two feet long, according to its ſtrength. If the leading ſhoot be very ſtrong, you may top it twice in the ſummer, as directed for Pears, and at the ſame time that you top them; repeating the ſame every year till the wall is filled to the top. I would always recommend, where it is convenient, to allot one wall for Plums and another for Cherries, as they always thrive beſt by themſelves.

As you will have Plum-trees to ſpare, that were planted between Pear-treees, when they begin to meet, they ſhould be planted againſt another wall, or planted out as Dwarf Standards. Thoſe which you intend for Standards ſhould be prepared in the following manner. The year before you mean to tranſplant them, cut in the ſide-ſhoots at different lengths, from one foot to three, according to the ſize of the trees; ſuffering them to grow rude all the ſummer, neither nailing-in nor cutting the ſide and foreright ſhoots. Some time during the winter open the ground round their roots, and cut in the ſtrong ones (which will cauſe them to put forth fine young fibres); then fill in the earth. In the following autumn, or during the winter (the ſooner the better), you may tranſplant them out as Standards *. If you intend to plant them againſt a wall, never cut

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* In tranſplanting of trees, eſpecially large ones, I conſider it to be of great conſequence, that they be placed in the ſame poſition (that is, having the ſame parts facing the ſame points of the compaſs) as formerly. If you take notice when a tree is cut down, you will find that three parts in four of the growth are on the North ſide.

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the ſide-ſhoots, but only the roots; by this method the trees will bear fruit the firſt year after tranſplanting, and there will be a great ſaving of time and money. I have often tranſplanted old Plum-trees that have been headed down, that have made very fine roots, which I have divided, and thereby obtained four or five trees from one, cutting them ſo as to form them into fine heads. Some that were tranſplanted in 1798 were in full bloſſom in 1799, producing ſome fruit, and this year (1800) bearing a full crop.

The ground in the borders and quarters where freſh trees are to be planted ſhould be well trenched, two ſpits deep at leaſt, to give the roots room to run into the freſh-ſtirred ground.

When you plant trees without ſtirring the mould, they ſeldom thrive well.

When Plum-trees are planted for Standards in an orchard which is to be kept for graſs, they ſhould be in rows at the diſtance of twenty yards from each other. If in the kitchen garden for Standards, I would always recommend the planting of Dwarfs. You may train the tree up to have a ſtem of about three feet high, at the diſtance of ſeventeen yards. If the garden is laid out with croſs-walks, or foot-paths, about three feet wide, make the borders ſix feet broad, and plant the trees in the middle of them. In the Royal gardens at Kenſington, which are very long and narrow, and where the winds are very hurtful, I have planted two rows of Apple-trees, intermixed with other fruit-trees, alternately, one row on each ſide of the middle walk (which runs the whole length of the garden), at the diſtance of ſeventeen yards from each other. I have alſo made croſs-walks of three feet broad, at the diſtance of ſeventy yards, with borders on each ſide ſix feet wide, having two rows of trees in each border, about twelve or fourteen feet aſunder. Theſe Dwarf trees are very uſeful in breaking the force of high winds, and are at the ſame time of ſuch a height that a man ſtanding on the ground may gather the fruit. As Plum-trees may be planted in the ſame manner and for the ſame purpoſe as the above, you can have the quarters clear for crops for the kitchen, and a free air will be admitted, which you can never have if you plant Eſpaliers; Dwarf Standards can be kept to what ſize you pleaſe; they look much handſomer than Eſpaliers, and produce a greater quantity of fruit.

On

On pruning and restoring old and decayed Plum-Trees.

I have reſtored Plum-trees, ſome of which were ſo far decayed as to have only from one to two or three inches of bark left; they are now completely filled up with ſound wood, with large heads, which at four years growth filled a wall ſixteen feet high, and are at this time full of fine fruit; ſome of the ſtems are ſeveral inches in circumference, bearing treble the crops produced by young trees that have been planted three times as long as they have been headed down.

Where the trunks are become hollow, I always cut out all the looſe rotten parts, and alſo examine the roots, cutting off what is rotten, injured, or decayed. This method ſhould be purſued with all hollow and decayed trees; and, if properly executed, they may be ſo completely filled up, as ſcarcely to leave a mark behind, even where the wood is totally decayed.

I have had ſhoots from Plum-trees which have been headed, that have grown upwards of ſeven feet long, and as large as a walking-ſtick, in one ſummer; this ſhould never be ſuffered; but they ſhould be pinched off with the finger and thumb, in the beginning of June, cloſe to an eye or a bud; unleſs the wall be filled to the top; in which caſe they ſhould never be cut while they continue to bear handſome fruit. Before they begin to ceaſe from bearing, you muſt always begin with ſhortening every other ſhoot, leaving them only from ſix inches to a foot long, and nail them in till the ſecond year, taking care to rub off the ſuperfluous and ſtrong foreright ſhoots; by that time they will begin to bear; then cut out the others that have done bearing: by this method you will keep the trees in a flouriſhing ſtate. When the branches are thus managed, they will frequently throw out ſmall dugs, or foreright ſhoots, about an inch or two long, which will flower next year. They ſhould never be ſhortened till after the fruit is ſet and become about the ſize of a large pea; by that time the leaves will have covered the fruit, and be able to protect it from the inclemency of the weather. You may now ſhorten theſe ſhoots cloſe to the fruit, which will leave them from one to two inches long. This method I have practiſed with great ſucceſs for ſeveral years. By leaving theſe ſhort foreright ſhoots, the fruit is protected till it is out of danger of being killed by the froſt, or ſtunted by the cold North and

North-weſt winds that happen about the latter end of March and beginning of April. The cold chilling rain and ſnow, which are alſo very injurious to the fruit, will be thrown off by the branches ſtanding out from the trees. I by no means like to ſee great ſpurs ſtanding out from the wall; for they are always ſure to be injured by the froſt and cold winds. [*See* PLATE II. *Fig.* 2 *and* 3.] When the ſhoots are left naked, I have often ſeen the plums turn yellow, and drop after they have grown to a conſiderable ſize, from their being expoſed to the cold froſty winds and rain *. Plums are more tender than any other ſort of ſtone fruit, owing to the flower cup dropping ſooner than that of Peaches, Nectarines, &c. They are very liable to decay, after cutting off large limbs or branches, which always brings on the gum and canker, if it be left to Nature to perform the cure. I would, therefore, recommend the application of the Compoſition (in the ſame manner as directed for other ſorts of fruit-trees) to every ſhoot where the knife touches, as ſoon as the trees are cut and nailed.

If you wiſh your fruit to be large and fine, you muſt take care to thin it where it is too thick; but that muſt not be done too ſoon, leſt it ſhould be pinched by the cold. The fruit ought to be of the ſize of a ſmall marble, and well ſheltered by the leaves, before you attempt to do this. Never pull off the leaves that ſhelter the fruit, till it is full-grown and begins to turn. This will be more fully treated of, when we come to the management of Peaches and Nectarines.

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* In cold and froſty weather, Plums muſt be covered in the ſame manner as Apricots.

I have taken up ſeveral old trees from the walls, when they have grown too near each other, and planted them out as Standards, at the ſame time ſhortening their branches to form handſome heads, which are now full of fine fruit. Theſe trees would, by any other perſon, have been thrown to the fagot-pile.

CHAPTER III.

OF PEACHES.

Different Sorts of Peaches described—Of the Soil—Of planting, heading, pruning, and training—Method of making Incisions—Of covering Peach-Trees, watering, &c.

THE Peach, Perſica, is a native of Perſia, and was introduced from thence into Europe. It belongs to the twelfth claſs of Linnæus.

The following are the Sorts cultivated in this Country.

[N. B. Thoſe marked with an Aſteriſk (*) adhere to the ſtone, and are by the French called Pavies.]

1. The White Nutmeg Peach. This Peach is ſmall, and the juice ſugary. It is only eſteemed as being firſt ripe. It is in eating in July, and ſoon grows mealy.

2. The Red Nutmeg is a great bearer, and valued for its early maturity. It is of a bright

vermilion colour, and has a fine muſky taſte. This Peach is much eſteemed, and ripens about the beginning of Auguſt.

3. The Early Avant has an agreeable flavour, and ripens in Auguſt; but is apt to be ſtringy.

4. The Small Mignonne is very red on the ſide next the ſun, and the fleſh has a rich vinous juice. It is ripe about the middle of Auguſt.

5. The Anne Peach (which is ſaid to have taken its name from Mrs. Anne Dunch, of Puſey in Berkſhire, where it was firſt raiſed) is a fine early fruit. It is ripe about the middle or latter end of Auguſt.

6. The Royal George Peach comes in ſoon after the former; the flower is large and white; the fruit of a dark red towards the ſun, and full of a fine rich juice. It is ripe about the latter end of Auguſt.

7. The Royal Kenſington is one of the beſt Peaches that we have; of a high red colour next the ſun, and of a yellowiſh colour next the wall; it is a good bearer, and not liable to be blighted. The fleſh is full of rich juice. It ripens about the latter end of Auguſt, or beginning of September †.

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† This handſome Peach, I am told, was, with ſome others, ſent from France to her Majeſty, upwards of twenty years

8. The Yellow Alberge is of a tolerable ſize and good taſte, but ſhould be perfectly ripe before it is gathered; otherwiſe it is good for nothing. It is ripe about the middle of Auguſt.

9. The White Magdalen. This Peach is ſeldom high-flavoured, unleſs it be forced, and then it is excellent. It ripens about the middle of Auguſt.

10. The Early Purple. This fruit is large, of a fine red colour, and full of rich vinous juice. It is an excellent Peach, and is ripe about the latter end of Auguſt.

11. The Large, or French Mignonne, is a beautiful large red Peach, and has a ſweet high-flavoured juice. This is one of the beſt French Peaches, and is ripe the latter end of Auguſt.

12. The Bourdine is a pretty large fruit, of a fine red towards the ſun; the juice is rich and vinous; the tree is a good bearer, eſpecially when old, and the fruit highly eſteemed. It is ripe about the middle of September. This tree will do very well in ſtandards, and produce plenty of good fruit.

years ago. I have therefore taken the liberty to give it the above name, that it may not be confounded with Mr. Grimwood's Kenſington Peach. When I came to Kenſington, in 1784, I found it mentioned in the Catalogue as a new Peach from France.

13. The Chevreuſe, or Belle Chevreuſe. This is a good peach: it is of middling ſize, and of a beautiful red colour; the juice is rich and ſweet. It ripens about the beginning of September, and is a plentiful bearer.

14. The Red Magdalen is large, and full of a rich ſugary juice of excellent flavour. It is a very good Peach, and ripens in the beginning of September.

15. The Early Newington, or Smith's Newington, is of a beautiful red colour towards the ſun, full of a ſugary juice, and ripens in the beginning of September.

16. The Mountauban is of a deep red, inclining to purple, next the ſun; but pale towards the wall. It has a fine melting fleſh, with a rich juice; and the tree is a plentiful bearer. It is ripe in the latter end of Auguſt.

17. The Malta Peach. This is of a fine red next the ſun, and has a white melting fleſh; the tree is a good bearer, and the fruit ripens in the beginning of September.

18. The Nobleſſe. This is a large Peach, of a bright red colour towards the ſun: the fleſh is melting, and the juice very rich in a good ſeaſon. This tree is a good bearer, and the fruit is ripe in the beginning of September.

19. *The old Newington Peach is of a fine

red colour, has a high vinous-taſted juice, and is eſteemed a good Pavie. It ripens about the latter end of September.

20. The Chancellor is one of the beſt ſort of Peaches, and of a fine red colour next the ſun; the ſkin is thin, the fleſh melting, and the juice very rich. It ripens about the beginning of September.

21. The Bellegarde Peach, or Gallande, is very large, and of a deep purple colour towards the ſun; the fleſh melting and full of a very rich juice. This is a fine Peach, and ripens about the middle of September.

22. *The Liſle Peach is of middling ſize, and of a fine violet colour next the ſun; the fleſh is melting and full of a vinous juice. It ripens about the middle of September.

23. The Roſanna is of a fine purple colour next the ſun, and has a rich vinous juice. It is reckoned a good Peach, and is ripe about the middle of September.

24. The Rambouillet (commonly called the Rumbullion) is pretty large, and of a fine red colour next the ſun; the fleſh is melting, and the juice vinous and rich. It ripens about the latter end of September.

25. The Admirable is a very large and beautiful Peach, finely coloured with red towards

the ſun; the fleſh is melting, and the juice ſugary and of an exquiſite taſte. It ripens about the middle of September.

26. *The Bellis (La Belle de Vitry). This fruit is of a pale red towards the ſun; the fleſh is white, and the juice vinous and rich. It is ripe in the latter end of September.

27. *The Portugal is of a beautiful red towards the ſun, and generally ſpotted; the fleſh is firm, and the juice rich and vinous. It ripens late in September.

28. La Teton de Venus (Venus's Breaſt). This is a middle-ſized fruit, ſomewhat longiſh; the ſide next the ſun is of a pale red, the fleſh melting, and the juice ſugary and rich. It ripens about the latter end of September.

29. La Pourprée (the late Purple). This fruit is large and of a purple colour; the fleſh is melting, and the juice ſugary and rich. It ripens about the beginning of October.

30. The Nivette is of a bright red next the ſun, and of a yellowiſh caſt towards the wall; the fleſh is melting, and full of a rich juice. This is an excellent Peach, and ripens about the middle of September.

31. *The Monſtrous Pavey of Pomponne. This Peach is very large, and of a round form; the fleſh is white and melting; it is of a fine

red colour towards the ſun. This ripens in the latter end of October.

32. *The Catharine Peach is a fine large fruit of a round make, and of a beautiful red colour towards the ſun. The fleſh is melting, and full of a rich juice. The pulp is improved by its lying three or four days before it is eaten. It ripens about the latter end of October; but there are not many ſituations where it ripens well. It is a plentiful bearer †.

33. The Bloody Peach. This is of a deep red next the ſun; the fleſh is alſo of a deep red. It ſeldom ripens in England without forcing; but is reckoned excellent for baking and preſerving.

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† This is an excellent Peach for forcing, and will be highly acceptable to thoſe who are fond of ſuch as adhere to the ſtone; and, as it is of a beautiful colour, it will make a very handſome appearance at table. Or, this fruit might have part of a wall appropriated to itſelf, and have the lights of the Peach-houſes (after forcing is over), or Melon lights, fixed upon a temporary frame againſt the wall. This would greatly forward the ripening of the fruit in bad ſeaſons; and, as the tree is a good bearer, it would amply recompenſe any one for the trouble, by furniſhing a ſupply of fruit for the table till the middle of November. This would alſo aſſiſt in ripening the wood well for the ſucceeding year.

This Peach is excellent for Tarts.

34. The Royal (La Royale). This is a large round Peach, of a deep red next the ſun; the fleſh is melting and full of a rich juice. It ripens in the latter end of September.

35. The Cherry Peach (Pêche-ceriſe, of Duhamel,) is ſmall and globular. It is of a beautiful red colour towards the ſun, and of a whitiſh wax colour on the other ſide. Its colour, which reſembles that of the Pomme d' Api, gives this little Peach a beautiful appearance. The fleſh is melting, and the juice has a tolerably good flavour. On a dry ſoil and good expoſure, it ripens about the beginning of October.

36. Grimwood's New Royal George is a high coloured Peach, and of a fine flavour. It ripens in the latter end of Auguſt, or beginning of September †.

37. The Superb Royal is a fine large Peach of a red colour towards the ſun, and pale on the other ſide. It ripens in September.

38. The Queen Charlotte nearly reſembles the ſmall Mignon, and ripens about the ſame time.

39. The late Violet is eſteemed a very fine peach, and ripens in September.

40. Lockyer's Peach is a fine handſome fruit, and ripens in September.

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† This Peach ſeems to be the ſame as the Royal George.

To the foregoing may be added,

Allen's Royal.
Bourdeaux.
Buckingham Mignonne.
Carliſle.
Double Swalch.
Double Bloſſomed.
Double Mountagne.
Dwarf Orleans.
Eaton.
Fairſcot's.
Ford's Seedling.
Hemſkirk.
*Incomparable.
Lord Falconberg's Mignonne.
Low's large Melting.
Mallacotan.
Millet's Mignonne.
*Pavie Admirable.
*Pavie Royal.
Peche de Pau.
Ronald's early Gallande.
Sion.
Smooth-leaved Royal George.
Steward's late Gallande.
Vanguard.
Violette hative.
White Bloſſomed.

Peaches proper for a small Garden.

The Early Avant; Small Mignonne; the Anne Peach; Royal George; Royal Kenſington; Nobleſſe; Early Newington; Gallande; Early Purple; Chancellor; Nivette; the Catharine; the late Newington.

Of the Planting, Pruning, Training, &c. of Peach-Trees.

Peaches require a lighter ſoil than Pears and Plums; and a light mellow loam is beſt. If the natural ground ſhould be a ſtrong brick mould, or rather inclinable to clay, it will be neceſſary to take out ſome of it, particularly when you firſt make the borders, and mix with it ſome light mould, ſand, or old lime rubbiſh. At firſt making the borders, you ſhould take out the earth where the trees are to be planted, as before directed for Apricots; and keep working the reſt with rotten leaves, or ſtreet-dung, and the above mixture; throwing them up, as early as you can ſpare them, in ridges rough from the ſpade, which will let the froſt and ſun penetrate and meliorate the ground.

If the ground ſhould be wet, make ſome drains acroſs the borders, to lead the water from the roots of the trees to a drain made along the middle walk. If the ground ſhould have a ſlope, you can very eaſily convey the water off when the ſprings are near the ſurface; but if the wet be occaſioned by rains, and the ſtiffneſs of the ground holds the water, you ſhould give the border a proper ſlope to carry it off from the roots of the trees. Fill the croſs drains, leading to that along the middle of the walk, with old bricks or ſtones at bottom, and at top with rough gravel*, which will keep the ground dry; at the ſame time laying it ſloping from the wall, ſo as to throw the water that falls in heavy rains toward the middle walk, where it will ſoon ſoak into the ground. When water is ſuffered to ſtand about the roots of tender trees in ſtrong land, it is ſure to bring on the mildew, which will ſpoil and render them good for nothing but the faggot-pile. Sometimes, indeed, I have recovered them, by moving them to another aſpect. All the French Peaches are very liable to mildew on ſtrong land.

Where there is not a proper deſcent to carry off the water, the bottom of the main walk ſhould be filled up with brick-bats or ſtones, and the ſmall ſtones raked from the quarters of the garden, making a dry drain along the middle nine inches wide, or more, covered with bricks or ſtones. The walk, when finiſhed,

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[*] The drains ſhould be deep enough to have two feet of mould above the gravel; which will prevent their being hurt in trenching the ground.

ſhould have a gentle riſe in the middle, in order to throw the rain water toward the edges.

Where the ſoil is a ſour wet clay, it will be neceſſary to throw into the bottom of the border brick-bats covered with lime rubbiſh, or core from the ſkreenings of lime; then water it, and when nearly dry ram it well, which will convert it into a hard ſolid ſurface, and prevent the roots of the trees from penetrating the wet earth below. It will alſo ſerve to carry off the water to the drains.

With regard to the choice of Peach Trees, the directions already given for Apricots will ſerve. They ſhould be procured in the latter end of October, or beginning of November, as ſoon as the leaf begins to fall; and, if poſſible, the ground be ready beforehand.

The earlier you go to the nurſery the better, to mark and take up the young trees; for he that goes firſt has the greater choice.

The ground, if new borders, ſhould be well trenched to receive the trees; if to ſupply the places of others which have been removed, or where trees have died, all the old roots ſhould be carefully taken out, and freſh mould put in where the old was taken away; remembering to raiſe the new mould a proper height above the old; as it is a very great hurt to fruit trees, when they are planted too deep: if they are not kept up above the level of the old ground at firſt, they ſeldom thrive well. When the trees are planted, water the roots well to ſettle the mould, letting it remain for ſome days, till the water is abſorbed; then tread the mould, and fill the holes up to the top; obſerving the ſame rules as hereafter given in caſe of dry weather, letting your freſh-planted trees remain uprunned till the Spring.

When you ſee the buds begin to ſhoot, if the trees be maiden trees of one year's growth, you may head them to five or more eyes, according to their ſtrength; then rub on a little of the Compoſition where you cut off the top, obſerving to cut it ſloping, as before directed, and as near the top buds as may be, and alſo to rub off the foreright ſhoots. When the young ſhoots have ſtrength, nail them to the wall, to prevent their being broken by the wind. If the leading ſhoot be very ſtrong, pinch off the top of it about the beginning of June, which will make it throw out ſome fine ſtrong ſhoots, to help to fill the wall. None of the ſhoots ſhould be ſuffered to grow too long during the firſt and ſecond years; which may always be prevented by pinching the ends of them; but they ſhould never be topped, when the tree ſends out fine kind ſhoots, till the ſpring following, when you may prune them, according to the ſtrength of the tree, and the quantity of wood it has made during the preceding ſummer, leaving your ſhoots from ſix to twelve inches long; by which means you will ſoon be able to fill the lower part of the wall. It is too common a practice to lay-in the ſhoots at full length, taking off only the points of the branches, which generally, after a few years, leaves the walls quite naked: whereas if attention were paid to the training, eſpecially for the firſt four years, you could always fill the walls with fine bearing wood from top to bottom, and the trees could produce a great deal more fruit, and of much finer quality, than when they are run up in the former way; for thoſe trees, in general, are ſo weak that they have not ſtrength to bear good fruit. The third year, if care be taken to manage the trees properly in ſummer, you may bring them into a bearing ſtate. If the ground be ſtrong, they will grow very vigorouſly; in that caſe, you muſt pinch all the ſtrong ſhoots about the month of June, which will make them throw out ſide-ſhoots; theſe, if not laid-in too thick, will make fine bearing wood for the ſucceeding year. If you ſuffer the ſtrong ſhoots to grow to their full length, they will be large and ſpongy, and will neither produce fruit nor good wood for the following year. Weak ſhoots ſhould never be nailed, although they may be full of bloſſom, as they never bear good fruit. Sometimes weakly trees are covered over with bloſſom; but if too much fruit be ſuffered to remain on them, they will be weakened ſo much that they will never recover. In that caſe, I would recommend picking off the greater part of the fruit, to let the tree recover its ſtrength. When you prune trees in the above ſtate, obſerve never to prune at a ſingle flower-bud; if you do, you will be ſure to kill the ſhoot; or, at leaſt, it will die as far as the next wood-bud. [*See* PLATE III, *Fig.* 2.]

On obſerving, you will find ſome ſhoots, and ſometimes whole trees, with nothing but ſingle flower-buds. Theſe ſorts of ſhoots ſhould be laid-in at full length. Always obſerve the next branch that has got ſome wood-buds, and cut it cloſe, that it may produce fine wood to ſupply the place of thoſe that have only flower-buds, which may be cut out next year.

When Peaches come into a bearing ſtate, you will, in general, ſee two flower-buds cloſe together; if you look between theſe flower-buds, you will ſee what is called a wood-bud; you ſhould always cut at ſuch double buds; as from between them come out the ſhoots that produce the fruit for next year.

If you obſerve the above rules, you cannot miſtake in pruning your Peaches. [*See* PLATE III. *Fig.* 2.]

When the trees come into a bearing ſtate, you may keep them in a flouriſhing one by proper management, and attention to the Summer pruning. I have often topped the ſtrong ſhoots twice in the courſe of the Summer, before I could get them to produce fine kind bearing wood. I have often had ſhoots that grew, in the courſe of one Summer, upwards of ſix feet in length, and as thick as my thumb. When ſuch ſhoots as theſe are laid in near their full length, the lower part of the wall will be left naked [*See the* PLATE, *Fig.* 1.]; beſides, theſe ſtrong ſhoots exhauſt the tree of its ſtrength, and never produce good wood when you neglect to top them in Summer. I would recommend to cut out ſuch ſhoots when the trees are pruned in the Spring, and to leave only the fine kind bearing wood (which you may know by two ſmall leaves where the flower-buds will be in the following year; the ſtrong ſhoots have only one leaf-bud at each eye); always

ways remembering to lay the branches as horizontally as you can, which will check the growth of the ſhoot, and make the wood much finer, and fit for bearing the ſucceeding year. You ſhould always rub off all the uſeleſs ſide-ſhoots that cannot be nailed in againſt the wall, leaving only the beſt, and laying them in about three inches apart. Be very particular to pick off all the ſide-ſhoots that come out near the tops of the branches; which, if left, would weaken the fruit-bearing branches for next year. This ſhould be done as ſoon as you can lay hold of theſe ſhoots with your finger and thumb: if you ſuffer them to grow ſtrong, they will hurt the fruit-bearing ſhoot.

Of Pruning, Training, and Nailing old Peach-Trees.

When the trees run up to the top of the wall, leaving about three fourths of it naked, [*See* PLATE III. *Fig.* 3.] the beſt way is to cut them as far back as you can find any young ſhoots or buds. You muſt always leave ſome young ſhoots or buds on Peach-trees, otherwiſe you endanger the life of them. Never head them as you would Apricot, Apple, or Pear-trees. If you cut or head down Peach-trees without attending to the caution given above, you run a great riſk of killing them; but if there are a few young ſhoots, the top may with ſafety be cut off, juſt above them, as they will lead the ſap up and produce ſtrong branches, which ſhould be topped as you would do a young tree to fill the wall.

It is more difficult to procure new wood from old Peach-trees than from any other, except Nectarines. I have often made inciſions in the old branches, about the joint, cutting out a piece from one to three inches, according to the ſize of the branches. [*See* PLATE XI. *Fig.* 2.] This ſhould be done in ſeveral places of the tree, to furniſh it with young wood; always rounding the edges where the inciſion is made, which ſhould be above the joint, and as near to it as may be. The operation ſhould be performed in the month of April; but never cut off the old branches, unleſs you perceive ſome young ſhoots making their appearance. When they are about three or four inches long, cut off the old branch, which will cauſe the freſh young wood to make a rapid progreſs the firſt ſummer, and you will have fine fruit on them the following year.

Always uſe the Compoſition where you cut off old branches; obſerving to round the edges, and cut out the canker which you find in the old bark where the branch was amputated.

In Peaches, the canker is of a brown colour; and, in the bark, it appears in ſmall ſpecks or dots, as if made with a pen. All theſe ſhould be cut out clean; for if any part of the canker remain, it will affect the new wood as it begins to grow. Wherever you ſee the gum oozing, you may be certain that the canker is not quite eradicated.—See the Chapter on the CANKER.

In the latter end of April it will be neceſſary to look over your trees, and rub off what ſuperfluous foreright ſhoots remained after going over them the firſt time. Indeed, if you were to examine the trees once every fortnight, it would be ſo much the better, as by ſo doing they can be kept in perfect order. I have ſo accuſtomed myſelf to look over my trees, that I do it as I walk about my ordinary buſineſs, which ſaves a great deal of time. Care ſhould be taken not to let the ſhoots get too long before they are tacked to the wall, leſt they ſhould be broken by the wind. I do not however approve of nailing the young wood too ſoon: for, by ſo doing, the heat of the ſun will occaſion them to grow too faſt.

You may ſave ſome of the largeſt and ſtraighteſt of the ſhoots that are cut off, and run them in * among the ſmall branches of the trees to prevent them from being broken by the wind. This will ſave a great deal of ſummer-nailing: I mean this for the ſecond Summer-nailing. At the time you do this, carefully take off all the ſide ſhoots that come out from the tops of the young branches.

When the ſecond nailing is done, if you ſhould find any very ſtrong ſhoots, they ſhould be cut out, leaving the fine kind ſide ſhoots that have been produced ſince the firſt topping; but only thoſe that will bear fruit. If the Autumn ſhould prove fine, the trees will continue in full leaf to the end of October, and ſometimes to the end of November.

When the leaves begin to fall, take a ſoft broom, and bruſh it gently over the branches of the trees, in order to take off as many of the leaves as you can, without hurting the buds. Remember, however, to bruſh upward; for if you bruſh downward you will be very liable to break the buds.

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* That is, let the middle of the branch run in be on the outſide of the ſhoot that you wiſh to preſerve, and the ends tucked under the two adjoining branches. After the fall of the leaf it will be neceſſary to take out theſe looſe branches; which will give the ſhoots more liberty, and admit the ſun and air to ripen the wood before the ſpring pruning.

As ſoon as all the leaves are off, I would adviſe to unnail the young branches that were nailed-in during the Summer, leaving the ſtrong ones to keep the tree faſt to the wall. By theſe means, the branches, being looſe from the wall, will receive the benefit of the ſun and air, to ripen and harden the young wood, which will not then be ſo liable to be killed by a hard winter. Leaving the trees ſo till the Spring, when you begin to prune them, there will be great choice of fine bearing wood to fill the walls.

The nails and ſhreds that were laid up in Autumn, when the branches were unnailed, ſhould be pointed and picked during the wet weather in Winter: they will then be fit to uſe again. The ſhreds that have been uſed in Summer ſhould be ſoaked in boiling-hot ſoapſuds for three or four days, which will kill the eggs of earwigs and other inſects, ſo very deſtructive to Peaches.

After the trees are cut and nailed, if the weather ſhould be froſty, it will be neceſſary to cover them when the flowers begin to open. Some cover the trees with yew, and others with branches of fir, laurel, &c. but old netting is the beſt covering; and it ſhould be put on threefold, as directed for Apricots. When the leaves begin to cover the fruit, and the weather is likely to be fine and ſettled, the netting ſhould be taken off by degrees, but by no means all at once. By the forked ſticks, as before obſerved, the nets may be kept at what diſtance you pleaſe; but never be in too great haſte to uncover the trees, nor ſuffer the ſhoots to grow through the meſhes of the nets; for, when that is the caſe, a great many of them will be broken in taking off the nets. The trees ſhould be uncovered in cloudy weather, or when it is likely to rain; if the nets be taken off in clear weather, the leaves are liable to be hurt by the ſun. Be careful, in taking off the foreright and ſide ſhoots, not to expoſe the fruit; rub them off near the extremities, leaving thoſe which you want to fill up the wall as low on the branch as poſſible, at the ſame time leaving only one for a leading ſhoot. When the fruit is about the ſize of a ſmall marble, begin to thin them; which operation muſt be left to the judgment of the perſon who does it; but it ſhould be according to the ſtrength of the tree. This ought to be done very regularly, that the fruit may be equally diſperſed over the tree. If left too thick, it will not have room to ſwell: this frequently happens. If the tree be very ſtrong, you may leave from three to ſix Peaches on each ſhoot;

according to the ſtrength and length of the branch.

I have obſerved, that where the Compoſition was applied to prevent the ſap from being exhaled by the ſun and air, all the trees that were very much loaded with fruit were not in the leaſt hurt; while the trees that were treated in the common way were greatly injured, and often killed, when they have had a great crop.

In very dry ſeaſons, it will be neceſſary to make a large baſin round each tree; or, rather, make up an edge along the whole border with mould, as you would for a bed to bed out plants in a nurſery; then give the trees a good watering, and mulch the border (which ſhould be from two feet and a half to three feet broad) with ſome very rotten dung or leaves, which will keep the roots of the trees moiſt, and prevent the ground from cracking. Water the trees once a week during dry weather, and ſprinkle the branches and leaves every other day, in the afternoon, with the engine, preſſing your forefinger over the mouth of the pipe, in order to ſpread the water very fine. By theſe means you will keep the trees clean and free from inſects; always remembering not to ſprinkle them when the ſun is on them, nor too late in the evening, as the former ſcorches the leaves, and the latter is apt to bring the mildew on the tender ſorts of Peaches. If you find any of the trees infected, leave off ſprinkling them, or water them with clear lime-water, as hereafter directed; but this ſhould always be done in warm weather. By frequently ſprinkling the trees with lime-water, and throwing it plentifully on the underſide of the leaves, where the Acarus, or red Spider, is moſtly found, you will in a ſhort time extirpate that deſtructive inſect.

The next thing to be done is, to look over the trees, and take all the late ſide-ſhoots, which would not ripen, off the wood fit to bear the following year; taking care, however, to keep the fruit ſhaded; and never ſuffer the leaves to be picked off till the fruit be grown to its full ſize; then begin to take off ſome of them, to let the fruit attain its natural colour. This may be done once a week, in a gradual manner; by which method the fruit will continue much longer in ſucceſſion, than if the leaves were picked off all at once: in the latter caſe, the fruit all ripens at the ſame time; but, by thinning at different times, there will be a regular ſucceſſion for the table.

It is a bad practice to pick off the leaves of Peaches before the fruit is grown to its natural ſize. The ſhade of the leaves nouriſhes the fruit very much; and, if you obſerve, wherever the leaves are picked off the fruit will be ſmall, ſtunted, and ill-flavoured. Remember to hang up the bean-ſtalk (as hereafter deſcribed) before the fruit begins to ripen, in order to get rid of the ear-wigs, &c. otherwiſe they will greatly injure the Peaches.—[See the Chapter on INSECTS.]

I would recommend planting ſome trees of the early Peaches againſt Eaſt or North walls; for, by ſo doing, you will have a regular ſucceſſion of fine Peaches till the late ſorts, againſt the South and Weſt walls, come in; but never plant late ſorts on a North or Eaſt wall. You may plant Peaches between Pears and Plums till they meet each other; then tranſplant them againſt other walls, or where dead trees have been taken up.

The following are the Sorts that I would recommend to be planted against North and East Walls; viz.

Early Avant; Early Ann; Early Mignonne; Royal George; Red Magdalen; Royal Kenſington; Nobleſſe; Groſs Mignonne, and Millet's Mignonne.

I have often heard of Peaches and Nectarines growing on the ſame tree, but never had occular demonſtration till Mr. Wilmot, market gardener near Smallbury Green, in the pariſh of Iſleworth, laſt ſeaſon ſent me a Peach which partook of the nature of the Peach and Nectarine both in appearance and taſte; and he aſſures me that ſeveral trees in his garden have for ſome years paſt produced fruit of the ſame kind. I alſo ſaw a Gallande Peach-tree, laſt ſeaſon, in Mr. Gilpin's garden at Eaſt-Shene, which had on one of its branches two Nectarines and a Peach. Theſe I examined very minutely; and Mr. Gilpin had the goodneſs to ſend me one of the fruit, which had the appearance and flavour of a Red Roman Nectarine. There were Nectarine trees of that kind on the ſame wall at no great diſtance. The only reaſon that I can aſſign for ſuch phænomena is, that the farina might have been injured by the froſt, or perhaps, in the former caſe at leaſt, the farina of the Nectarine and Peach might have been intermixed, either by the wind, or by bees.

CHAPTER IV.

OF NECTARINES.

A Description of Nectarines cultivated in England, and the Method of Planting, Pruning, and Training them.

THE Nectarine (properly ſo called from Nectar, the poetical drink of the Gods) was introduced here about the year 1562, and belongs to the twelfth claſs of Linnæus.

This fruit differs from the Peach in nothing more than in having a ſmooth rind, and the fleſh being firmer †.

The Varieties which are cultivated in this Country are,

1. Fairchild's Early Nectarine. This is one of the earlieſt; it is a ſmall round fruit, of a beautiful red colour, and well flavoured; and is ripe about the middle of Auguſt.

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† Thoſe marked with an aſteriſk adhere to the ſtone.

2. *Newington Nectarine. This is a fine fruit, of a beautiful red colour next the ſun, and yellow on the other ſide. It has an excellent rich juice, and ripens about the middle of September.

3. The Elruge Nectarine is ſaid to have been firſt cultivated by Gurle, a Nurſeryman at Hoxton, in the time of Charles the Second. It is of a middle ſize, of a dark red or purple next the ſun, and of a pale green on the other ſide. It has a ſoft melting pulp and vinous juice, and is ripe in the latter end of Auguſt, or beginning of September.

4. The Scarlet Nectarine is of a fine ſcarlet colour next the ſun, but of a pale red next the wall. It ripens in the latter end of Auguſt, or beginning of September.

5. *Brugnon, or Italian Nectarine, is of a deep red next the ſun, and of a pale yellow on the other ſide; it has a rich flavour in a good year, and ripens in the latter end of Auguſt, or beginning of September.

6. *The Roman Red Nectarine is a large fruit, of a dark red colour next the ſun, but of a yellow colour on the other ſide; and when full ripe it ſhrivels; the pulp is then replete with a rich juice. It is ripe in September.—This Nectarine has a ſmooth leaf, and the

Newington a jagged one: which is one of the moſt eſſential differences by which theſe two excellent fruits are diſtinguiſhable from each other.

7. Murry Nectarine is of a reddiſh colour toward the ſun, and of a pale green toward the wall. This fruit has a tolerably good flavour, and ripens about the middle of September.

8. Temple's Nectarine is of a middle ſize, of a pale red colour toward the ſun, and of a yellowiſh caſt next the wall. This fruit, when quite ripe, ſhrivels; the pulp is then full of rich juice of a fine flavour. It ripens about the middle of September, or beginning of October.

9. *Golden Nectarine. This is a handſome fruit of a ſoft red colour toward the ſun, and yellow on the other ſide. It has a rich flavour, and is ripe about the beginning of October.

10. The Peterborough, or late green Nectarine (called alſo the Vermaſh), is of middle ſize, round ſhape, and always of a green colour; the fleſh is firm, and, in a good ſeaſon, tolerably well flavoured. It ripens about the middle of October.

The Violet Nectarine is of a middle ſize, and a purple colour next the ſun, but pale on the other ſide; it has a vinous flavour, and ripens in the latter end of Auguſt, or beginning of September.

To the forgoing may be added:

Anderſon's Nectarine.
Aromatic.
*Black Newington.
Clermont.
De la Taille.
*Early Pavie.
*Genoa.
Luncomb's Black.
*Muſk Violet.
Newfoundland.
New White.
Princeſs Royal.
*Rogers's Seedling.
Royal Chair d'or.
*St. Omer's.
Tawny, ripe in September.
White, ripe in Auguſt and September.

A Selection of Nectarines for a small Garden.

Fairchild's Early Nectarine; Elruge; Scarlet; Newington; Red Roman; and Murry.

Of the Management of Nectarines.

It is unneceſſary to ſay much on this head, as the management of Nectarines is almoſt the ſame as that of Peaches.

The ſame rules muſt be obſerved with regard to pruning and cutting-out diſeaſed parts; and the ſame attention will be neceſſary during the ſummer; obſerving, in particular, not to lay-in the wood too thick.

On account of the ſmoothneſs of the ſkin of the Nectarine, it ſuffers much more from millepedes (or wood-lice), ear-wigs, &c. than the Peach; it will, therefore, be neceſſary to hang up a greater number of bundles of bean-ſtalks about theſe than about other Fruit-trees. Waſps are alſo very deſtructive to Nectarines, and the trees are very liable to be infeſted with the red ſpider; theſe are to be deſtroyed as hereafter directed.

Let the wall, with the ſtems and branches of the trees, be carefully inſpected, and all the ſnails about them picked off and deſtroyed. The young ſnails frequently commit great depredations on the leaves before the fruit is ripe.—[See the Chapter on INSECTS.]

It may, perhaps, be neceſſary to obſerve here, that after the fall of the leaf the young ſhoots ſhould be unnailed, in order to harden the wood; and in hot weather form baſins on the borders, and mulch them, as directed for Peaches.

The ſame mode of watering with the engine is alſo to be obſerved, in dry hot weather.

Do not omit to thin the fruit when grown to a tolerable ſize; but never pick off the leaves till the fruit be full-grown; obſerving the rules already laid down for Peaches. It will anſwer equally well with Nectarines as with Peaches, to plant ſome trees on an Eaſt wall, which will continue the ſucceſſion much longer than if all were planted in the uſual aſpects.

In the ſummer of 1800, which was dry and hot, we had a Weſt aſpect which was ſo much infeſted with the red ſpider that I expected the trees would have been totally deſtroyed. In February following, I had the wall well-waſhed with ſoap and urine mixed, as alſo the ſtems and branches of the trees. (This muſt be done before the buds begin to open, and in the forepart of the day, that the trees may get dry before the evening; but never in froſty weather.) Afterwards, wherever I ſaw any appearance of the ſpider, I watered the trees with clear lime-water, as directed in Chapters III. and XXVIII. Theſe trees are now in a perfectly healthy ſtate; but in ſome gardens, where theſe precautions have been neglected, many of the trees are entirely killed.

CHAPTER V.

OF CHERRIES.

Different Sorts; and the Propagation, Planting, Pruning, and Training, of them—How to preserve them from Insects.

CHERRIES are ſaid to have come originally from Ceraſus, a city of Pontus, from which Lucullus brought them, after the Mithridatic war, into Italy. They ſo generally pleaſed there, and were ſo eaſily propagated in all climates into which the Romans extended their arms, that, within the ſpace of a hundred years, they grew common as far as the Rhine, and were introduced into Britain about Ann. Dom. 55 *.

Cherries

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* It is ſuppoſed by many, that Cherries were firſt introduced into this country in the reign of Henry the Eighth; but Lydgate, who wrote his poem called "Lickpenny" before the middle of the fifteenth century, or probably before the year 1415, mentions them in the following lines, as being commonly ſold at that time by the hawkers in London ſtreets:

Hot

Cherries belong to the twelfth claſs of Linnæus's Syſtem; Icoſandria Monogynia.

A Short Description of the principal Cherries cultivated in England.

1. The ſmall May Cherry is the firſt ripe, and requires a good wall. One or two trees of this kind may be ſufficient for a large garden. It is ripe in June.

2. The May Duke comes in about the ſame time as the former, but is larger: it is an excellent Cherry, and bears well againſt a wall.

3. The Archduke, if permitted to ripen properly, is an excellent Cherry. It is ripe in June and July.

4. The Hertfordſhire Cherry is a ſort of Heart, but firmer and of a finer flavour than Hearts in general. It does not ripen till the latter end of July, or beginning of Auguſt, which renders it the more valuable, as it ſucceeds more early Cherries.

5. The Bleeding Heart, or Gaſcoign's, is a very large Cherry of a long form, and dark colour;

Hot peſcode own began to cry,
Straberys rype, and Cherryes in the ryſe.

Ryce, rice, or ris, properly means a long branch; and the word is ſtill uſed in that ſenſe in the Weſt of England.

colour; it has a pleaſant taſte, and ripens in the latter end of July.

6. Harriſon's Heart is a fine Cherry. It was introduced from the Eaſt Indies by Governor Harriſon *, grandfather to the preſent Earl of Leiceſter, and firſt cultivated at his ſeat of Balls in Hertfordſhire: ſome of the trees, I am informed, he preſented to George the Firſt; and they are at this time in a flouriſhing ſtate, bearing fine fruit, in Kenſington Gardens. This Cherry is ripe in July and Auguſt.

7. The Black Heart is a fine Cherry, too well known to require deſcription.

8. The Morello, or Milan Cherry, is a very fine fruit when kept till the month of October, and makes a very great addition to the deſſert at that time of the year. This is the beſt Cherry that we have for preſerving, and for making Cherry-Brandy.

9. The Carnation takes its name from its colour, being red and white. It is a large round Cherry, but not ſo ſweet as the Duke Cherry. It ripens in the latter end of July.

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* Governor Harriſon went out Governor of Fort St. George in December 1710, and returned home in 1719; and it is probable that he brought this Cherry home with him: if ſo, ſome of theſe trees in Kenſington Gardens muſt be upwards of eighty years old.

10. The yellow Spaniſh Cherry is of an oval ſhape and amber colour, and is a ſweet pleaſant fruit. It is ripe in Auguſt and September.

11. The Corone, or Coroun Cherry, reſembles the Black Heart. This is an excellent fruit, and a good bearer. It ripens about the beginning of Auguſt.

12. The Lukeward comes in ſoon after the former, and is alſo a fine pleaſant fruit, and a good bearer. It ripens in the beginning of Auguſt.

13. The Graffion. This is ſuppoſed by many to be the ſame with Harriſon's Heart; but, upon a cloſe examination, I find it to be a different Cherry: its fleſh is firmer and the ſtone flatter. It ripens in July and Auguſt.

14. Ronalds's large Black Heart Cherry, introduced into this country in the year 1794 from Circaſſia. Mr. Ronalds, nurſeryman at Brentford, and the only perſon, to the beſt of my knowledge, who has cultivated it in England, ſent me ſome of the fruit this Summer, 1801. It is a fine large Cherry, a great bearer, and will, without doubt, be valuable as a forcing ſort. This Cherry, in my opinion, is well worth cultivating. It ripens in the beginning of July.

15. Fraſer's Black Tartarian Cherry * is a fine large fruit.

16. Fraſer's White Tartarian Cherry is white and tranſparent. Theſe Cherries are excellent bearers, but particularly the black kind: the fruit is of a fine briſk flavour, and they ripen early.

17. The Lundie Gean, cultivated at Lord Viſcount Duncan's, near Dundee, is black, and almoſt as large as a Black-Heart Cherry. It is now common in the nurſeries about Edinburgh; and Meſſrs. Gray and Wear have had it for ſome years in their nurſery at Brompton-park.

18. The Tranſparent Gean is a ſmall delicious fruit.

From the Black Cherry, which is ſuppoſed to be a native of England, are raiſed, by ſeeds,

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* The Tartarian Cherries were brought from Ruſſia in the Autumn of the year 1796 by Mr. John Fraſer, of Sloane-ſquare, Chelſea; well known for his indefatigable induſtry in collecting many curious plants, and other natural curioſities, in America and the Weſt Indies. He ſays, that theſe Cherries are natives of the Crimea, and that he purchaſed them of a German, who cultivated them in a garden near St. Peterſburg. This man had but few plants of them at that time, and ſold them as a favour at ten roubles a plant. Mr. Fraſer afterwards ſaw them in the Imperial gardens, where they were ſucceſsfully forced in pots.

the black Coroun, and the ſmall wild Cherry, of which there are two or three varieties, differing in the ſize and colour of their fruit. I would recommend planting theſe in parks and pleaſure-grounds, as the trees grow to a great ſize, and have a beautiful appearance. The fruit will be food for birds, and ſo the means of preſerving the finer fruit, in the garden and orchard, from their depredations. The wood alſo of theſe trees is very uſeful for turners and picture-frame makers. Stocks to graft upon are generally raiſed from the ſeed of this ſort. Theſe trees will thrive in poor land, where ſcarcely any other ſorts will.

The Cluſter Cherry is planted more for ornament, or curioſity, than for any other purpoſe.

To the above may be added:

Amber Heart.
Black Mazard.
Churchill's Heart.
Double-bloſſomed.
Flemiſh Heart.
Groſs Goblet.
Holman's Duke.
Jeffrey's Royal.
Kenſington Duke.
Large Spaniſh Cherry.
Late Large Morello.
Montmorency.
Ox Heart.
Purple Heart.
Red Heart.
Spaniſh Black.
South's large Black.
Swediſh Black Heart.

Tradeſcant's.
Turkey Heart.
Weeping.
Wentworth Heart.
White Heart.

Proper Kinds of Cherries for a small Garden.

The May Duke; the large Duke Cherry; Archduke; the Black Heart; Harriſon's Heart; Ox Heart; Turkey Heart, and Kenſington Duke Cherry.

Planting, Pruning, and Training of Cherry-Trees.

In the chooſing and planting of young Cherry-trees, the ſame rules are to be obſerved as are given for Apricots, Peaches, and Nectarines; and they muſt in like manner be headed down the firſt year.

In pruning Cherries, never ſhorten their ſhoots; for moſt of them produce their fruit at the extremities, the ſhortening, or cutting-off of which very frequently occaſions the death of the ſhoot, at leaſt of a great part of it. The branches, therefore, ſhould be trained at full length. I have often ſeen the whole tree killed by injudicious pruning. Wherever the knife is applied, it is ſure to bring on the gum, and afterwards the canker, which will inevitably kill the tree if no remedy be applied to the wounds.

I have headed down a great many Cherry-trees which were almoſt paſt bearing, and ſo eaten up with the gum and canker, that what few Cherries they bore upon old cankered ſpurs were not fit to be ſent to the table.

In the years 1790 and 1791 I cut, or headed down, fifty trees. The operation was performed in the months of April and May in each year. Theſe trees made ſhoots from three to five feet the ſame ſummer, bore fine Cherries the next year, and have continued to bear good crops ever ſince.

To the above trees I applied the Compoſition. At the ſame time I cut down twelve trees in the ſame row, but did not apply the Compoſition: theſe twelve trees all died in the ſecond and third years after. We now gather more Cherries from one tree where the Compoſition was applied, than we did from the whole number formerly; being alſo much finer and larger fruit.

When Cherry-trees are very old, and much injured by large limbs having been cut off (which will infallibly bring on the canker and gum, and, if no remedy be applied, in a ſhort time kill the trees); or if there are great ſpurs left ſtanding a foot perhaps from the wall (*See* PLATE IV. *Fig.* 2.); the beſt way to bring them to have fine heads, and to cover the wall, is to head them down as low as poſſible, taking care to leave ſome ſmall ſhoots, if there are any; if not, leave a bud or two at the ends of ſome of the ſhoots. Sometimes you will have a great difficulty to find any buds. If that be the caſe, in the Spring, before you mean to head the trees, make ſome inciſions in the branches. (*See* PLATE XI.) This ſhould be done on different branches, at the moſt convenient places for filling the wall with good wood. The ſize of the inciſions ſhould be from one to two inches, according to the largeneſs of the branches; obſerving to make them juſt above the joint where the buds ſhould come out. If you cut juſt below a joint, the ſhoot will die as far as the next bud or joint; and, of courſe, injure the tree, if no remedy be applied.

The time for performing this operation is in March, April, or May. The above method of making inciſions is only recommended where there are no young ſhoots or buds, and when the tree is in the laſt ſtage of the canker.

Where you have a few young ſhoots, or buds, cut down the head as near to them as you can, and take great care to cut out the canker till you come to the ſound bark. The canker makes its appearance in Cherry-trees in the ſame manner as it does in Peach and Nectarine trees, and may be eaſily diſcovered by an attentive obſerver. If any gum remains, it muſt be cut or ſcraped off; the beſt time for doing this is when it is moiſtened with rain; you can then ſcrape it off eaſily without bruiſing the bark. This operation is very neceſſary; and if it be neglected, the diſeaſe will increaſe rapidly.

Wherever the bark or branches have been cut off, the edges ſhould be rounded, and the Compoſition applied.

The general way of pruning Cherry-trees has been to leave great ſpurs, which continue to increaſe till they ſtand upwards of a foot from the wall, and become as thick as a man's arm: but be it obſerved, that cutting off, from year to year, the ſhoots that are produced from the ſpurs, increaſes the canker, till large protuberances, like wens, are formed on the branches, becoming very unſightly; and theſe occaſion them to produce only ſmall and ill-flavoured fruit, at a great diſtance from each other (*See* Plate IV. *Fig.* 2.) When this is the caſe, the method I purſue is, to head the trees down as before directed.

If the young ſhoots are properly trained, they will produce fruit the following year; and in the ſecond year they will produce more and finer fruit than a young tree that has been planted ten or twelve years.

It has been a general complaint, that Heart Cherries are bad bearers when trained up as wall-trees; but, by pruning them as Duke Cherries, I have brought them to bear in the ſame manner; that is, I leave a great many fore-right ſhoots in Summer, and tuck them in with ſome ſmall rods run acroſs under the adjoining branches, to keep them cloſe to the wall, and prevent them from being broken by the wind, and from looking unſightly.

Never make uſe of the knife in Summer *, if it be poſſible to avoid it, as the ſhoots die from the place where they are cut, leaving ugly dead ſtubs, which will infallibly bring on the canker. Theſe ſhoots may be cut in the

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* As Morello Cherries bear their fruit on the ſecond year's wood, from two to five in a cluſter, and not on ſpurs as other Cherries do, the ſtrongeſt and cleaneſt wood ſhould be laid-in at full length in the Summer, and all ſuperfluous ſhoots be rubbed off, leaving a regular ſupply to fill up the walls. They ſhould be pruned and nailed at the ſame time with other Cherries, either in Autumn or in the month of March; but we prefer Spring pruning.

Spring to about a couple of eyes, as Duke Cherries, which will form a number of flower-buds, as appears in PLATE IV. *Fig.* 1. *Fig.* 2. is an old branch, to ſhew the manner in which the ſpurs are formed when the old method of pruning is followed, and the barren unproductive ſtate of the tree.

As Cherries are a very conſiderable article of traffic in the London markets, and the markets of moſt towns throughout the kingdom, employing ſuch a great number of people during the Summer ſeaſon in gathering, carrying to market, and ſelling them, the raiſing of them is certainly worth any gentleman's while, eſpecially as the trees may be rendered ornamental as well as profitable, by planting them in ſhrubberies, &c. * Gentlemen of ſmall fortune, who are at a great expence with their gardens and plantations, may in a great meaſure reimburſe themſelves by ſelling their Cherries and other fruit (for which there will be plenty of chapmen), and thus enjoy at an eaſy rate the pleaſures of a rational and uſeful recreation.

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* At Aſhted-park, the ſeat of Richard Bagot Howard, Eſq. near Epſom, there is a Cherry-tree between fifty and ſixty feet high; and, at four feet from the ground, nine feet ſix inches in circumference. This tree, with many others of the ſame kind, was planted ſeveral years after the Cheſnuts mentioned in Chap. XX.

In all parts of the country, there are perſons employed in collecting fruit for the Markets, and to hawk it about from place to place; and ſurely it is much better to ſell it to them, than to let it rot on the ground, or be devoured by birds and inſects.

When Cherry-trees begin to produce ſpurs, cut out every other ſhoot to make the tree throw out freſh wood: when that comes into a bearing ſtate, which will be in the following year, cut out the old branches that remain; by that method you will be able to keep the trees in a conſtant ſtate of bearing, taking the ſame method as before directed with the foreright ſhoots.

Great care ſhould be taken to rub off many of them in the month of May, leaving only ſuch a number as you think will fill the tree. By ſo doing your trees will continue in a fine healthy ſtate, and not be in the leaſt weakened by bearing a plentiful crop of fruit. The reaſon is obvious: the great exhalation which would be occaſioned by the ſun and air in the common mode of pruning is prevented, by the Compoſition keeping-in the ſap which nouriſhes the branches and fruit.

I cut ſome trees, as directed above, more than twelve years ago, that are now in as good a ſtate of bearing as they were in the third year after the operation, and likely to continue ſo for many years.

In 1797, I pruned ſome very old trees in the month of May, which were left, to ſhew the old method of pruning; I, at the ſame time, cut ſome branches of the ſame trees according to the new method, to ſhew the difference of the fruit, which was taken by all who ſaw it for a different ſort of cherry. The Cherries from the old ſpurs were not half the ſize of the others, and were at leaſt three weeks later.

I am ſorry to ſay, that many who have ſeen the improved ſtate of the fruit-trees in Kenſington Gardens ſtill have their own managed according to the old method of pruning. Several, however, have adopted the new method with great ſucceſs. One gentleman in this neighbourhood, by renovating thirty-nine old Morellos planted on a North wall 176 yards long, and ten feet high, was in a few years able to ſell yearly, on an average, from thirty to forty pounds worth of fruit produced from them, beſides ſupplying his own family. In ſome years the Market-Gardener who ſold them allowed him three ſhillings per pound weight.

A row of Dwarf Cherry-trees that ſtood againſt an old paling in Kenſington Gardens, with an old thorn hedge at the back of it, (which every year ſo infected them with a blight, accompanied by an immenſe number of caterpillars and other inſects, that even in a fine year we could not gather eight baſkets from the whole row) became ſo fruitful after the hedge and paling were removed, that we gathered forty-two pounds a-day for ſix ſucceſſive weeks, beſide what the birds, waſps, and flies deſtroyed.

This eſtimate is within the bounds of truth; and I mention the fact to ſtimulate Market-Gardeners and Farmers, who have large orchards and gardens, to exert themſelves in trying every method, however unimportant it may at firſt appear, to improve and render them more fruitful.

The Duke and Heart Cherries from theſe trees were as fine as any that were produced from wall trees; and, as they are much more productive, I have been induced to take up many of the old renovated trees from the walls, and plant them out for dwarf ſtandards, ſupplying their places with Pears, Plums, Peaches, &c.

In all old gardens and orchards throughout the kingdom, and particularly in Kent, whence the London Markets are chiefly ſupplied with Apples and Cherries, the greater part of the old trees will hardly bear fruit ſufficient to pay the expence of gathering it; but if the above method of pruning, &c. were practiſed, the owner would ſoon find his account in it, and be amply repaid for his trouble: The fruit would be much finer, and he would have five times the quantity that the trees produce in their preſent condition; the trees would be more ſightly, and always keep in a flouriſhing and bearing ſtate.

When old ſtandard Cherry-trees become decayed and hollow, I would recommend heading them down, as directed for wall-trees and dwarfs. Scoop out all the rotten, looſe, and decayed parts of the trunk, till you come to the ſolid wood, leaving the ſurface ſmooth; then uſe the Compoſition as hereafter directed.

CHAPTER VI.

OF APPLES.

Different Sorts of Apples described—Of Heading Apple-trees—Of Espaliers and Dwarfs—Grafting old Apple-trees; and of the Advantage of using the Composition in that Operation.

LINNÆUS has joined the Pear, the Apple, and the Quince together, making them all of the ſame genus, and has reduced all the varieties of each to one ſpecies. They belong to the Twelfth Claſs, Icoſandria Pentagynia.

The ſpecies are,

1. The Wild Apple with a very ſour fruit, commonly called Crab.

2. Wild Crab of Virginia, with a ſweet-ſcented flower.

3. The Dwarf Apple, which is rather a ſhrub than a tree; commonly called Paradiſe Apple.

The following are the sorts of Apples which are most esteemed in England.

1. Acklam's Ruſſet. This is a ſmall Yorkſhire apple, of a ruſſet colour toward the ſun, and yellow on the other ſide; it is ripe in January, and keeps till March.

2. The Aromatic Pippin is a very good apple, of a bright ruſſet next the ſun; and the fleſh has a fine aromatic flavour. It ripens in October.

3. Baxter's Pearmain. This is a real Norfolk apple, of a handſome ſize, and pale-green colour, full of ſmall dark ſpots. A fine kitchen fruit, and will keep till April. This is alſo a good eating apple.

4. Beauty of Kent, is a fine large apple; reſembling a Codlin. It is ſtreaked with a fine red toward the ſun, and of a beautiful yellow, with ſome ſtreaks of red on the other ſide. This is a very good apple, comes into eating in September, and keeps till the latter end of April.

5. Belle Griſdeline. This new ſeedling was raiſed at Norwich; and ſtruck all who ſaw it with its beauty and never-failing crops. Mr. Lindley * firſt propagated it about ſeven years

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* Nurſeryman near Norwich.

ago, and gave it the above name. The original tree died two years ago. This is a handſome Apple, reſembling the Burſdoff, of a yellow colour, with red toward the ſun. It is an excellent table Apple, and will keep till March.

6. Bell's Pearmain. This is a real Norfolk Apple: it is large and handſome; red toward the ſun, and yellow on the other ſide. It is a fine kitchen fruit, and pretty good to eat raw. This Apple will keep till June.

7. Beſt Pool is a middle-ſized Apple, of a pale-green colour, ſtreaked with red towards the ſun. It is a good Apple, and is in eating from January to April.

8. Black Apple. This is a middle-ſized fruit, of a dark mahogany colour next the ſun, but fainter on the other ſide. It is of a pleaſant ſweet taſte, and keeps till the middle of April.

9. Bland's Summer Pippin is a handſome Apple of a gold colour, and an agreeable flavour. It is a great bearer, ripe in September, and keeps till Chriſtmas.

10. Blatche's fine ſmall Table-Apple, is about the ſize of a ſmall Golden Pippin; red toward the ſun, and green on the other ſide. It has a ſugary taſte, and comes into eating in January.

11. Boomrey. This is a pretty large handſome Apple, of a flat ſhape, and deep-red co-

lour; and the fleſh is ſtreaked with red. This Apple is not fit to eat raw, but will do well for cider, or for the kitchen. It keeps till April.

12. Bovey Redſtreak. This is a handſome Apple, of a flattiſh ſhape, beautifully ſtreaked with a bright red next the eye, which is ſmall, and of a yellow colour about the footſtalk. It keeps till the latter end of October.

13. Broad-eyed Pippin. This is a fine large flat Apple, with a very large eye; the colour is a greeniſh-yellow, with a little red toward the ſun. This is a good Apple, and keeps till May.

14. The Brandy Apple is about the ſize of a Golden-Pippin, flat ſhaped, and of a yellowiſh ruſſet colour. It is of a pleaſant flavour; comes into eating in January, and keeps till March.

15. Bursdoff, or Queen's Apple, is a beautiful fruit, red next the ſun, and of a fine yellow on the other ſide. This is a very fine Apple; in my opinion, next in perfection to the Golden Pippin, and about the ſame ſize. It is in eating from November to the end of March.

The Queen is ſo fond of this Apple, that ſhe has a conſiderable number of them imported annually from Germany.

16. Cadbury Pound, is a middle-ſized Apple, of a light-green colour. This apple is of a good

a good flavour; ripe in January, and keeps till March.

17. Carnation Apple. This is a beautiful middle-ſized fruit, finely ſtriped with red. It is ripe in January, and keeps till May.

18. Carbury Pippin. This, in ſize and ſhape, reſembles the French Crab, and is of a deep-green colour. It is a good baking Apple, and will keep till March.

19. Caraway Ruſſet. This is a handſome ruſſet-coloured Apple, about the ſize of a Nonpareil.

20. Calville. Red and White. Theſe are good Apples, and of a vinous taſte. Some have a red, and ſome a white pulp; and the white is reckoned of a moſt delicious taſte. They are in eating in September and October.

21. Cat's Head. This is a large oblong Apple, of a greeniſh-yellow colour, with a little browniſh red next the ſun; ſometimes the colour inclines to a ruſſet. This is a good baking Apple, and is in eating from October to December.

22. The Cockagee is a conical-ſhaped middle-ſized Apple, red on that ſide next the ſun, and of a fine yellow colour on the other. If properly managed, this fruit will keep

keep till February. It is a famous cider Apple, and bakes well.

23. The Codlin is generally the firſt Apple that is brought to market. This fruit is ſo well known that it needs no deſcription. It is in eating from July to December; and is good either for baking or boiling.

24. The Corniſh Nonpareil * is rather under the middle ſize; it is a little flatted, and of a ruſſet colour. This is a very good Apple, and keeps till the middle of March.

25. The Corniſh Pearmain, is of a middling ſize, and long ſhape: of a dull-green colour on one ſide, and ruſſet on the other. This is a very good Apple, and keeps till the latter end of April.

26. Court-of-Wick Pippin, is thus deſcribed by Mr. Billingſly, in his "Survey of Somerſetſhire:" "The favourite Apple, both as a table and cider fruit, is the Court-of-Wick Pippin; taking its name from the ſpot where it was firſt produced. It originated from the pip or ſeed of the Golden Pippin, and may be conſidered as a beautiful variety of that fruit. In ſhape, colour, and flavour, it has not its ſuperior: the tree is large, handſome, and ſpreading, and a very

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* This and the other Corniſh Apples were ſent to me from Penzance, by Mr. John Duncan.

very luxuriant bearer. On the whole, it cannot be too ſtrongly recommended." This Apple is larger than the Golden Pippin, of a yellowiſh-green colour, and a little tinged with red next the ſun. It comes into eating in January.

27. Cockles Pippin, is a handſome oval-ſhaped Apple, below the middle-ſize, of a ruſſet colour, mixed with yellow and red. It keeps till April.

28. The Corpendu, or Hanging Body, is a very large Apple, and has a red caſt on the ſide towards the ſun; but is pale on the other ſide. It takes its name from always hanging downwards; and comes into eating in September.

29. Dalmahoy Pippin. This is about the ſize of a Golden Pippin, of a green colour, and a little ſtreaked with red towards the ſun. It has a tolerably good flavour, rather ſharp; and is in eating from September to February.

30. Dimock's Red, is under the middle ſize, of a fine red colour, intermixed with a little yellow on the ſide from the ſun. It is ripe in January, and keeps till March.

31. Dredge's Seedling, is a fine large Apple, ſtriped with red next the ſun, and of a yellowiſh-green on the other ſide. This is an excellent

kitchen Apple, of a pleaſant taſte; and will keep till the latter end of January.

32. Dredge's Beauty of Wilts. This is a beautiful Apple, of a good ſize, and one of the fineſt yet known in point of general utility. It is of a fine bright yellow colour, ſpotted with red towards the ſun; and has an excellent vinous flavour. This Apple is good either for the table or baking; and will keep till March.

33. Dredge's Ruſſet, is a ſmall Apple, of a greeniſh-ruſſet colour, and of a pleaſant flavour. It is ripe in November, and keeps till Midſummer.

34. Dredge's White Lily, is a fine Apple, of an exceeding high flavour; and will keep till March.

35. Dredge's Fair Maid of Wiſhford. This is a fine middle-ſized Apple, of a yellowiſh-green colour, with ſome ruſſet next the ſun, and of an excellent flavour. It is a great bearer, and is in eating from Chriſtmas to Eaſter. This is an excellent deſſert Apple.

36. Dredge's Queen Charlotte, is a beautiful middle-ſized Apple, of a gold colour, with red towards the ſun. This Apple is of an exquiſite flavour, comes into eating about Chriſtmas, and keeps till February.

37. Dredge's Fame, is a good-ſized Apple, red toward the ſun, and ſtreaked like the Ribſton Pippin on the other ſide. This is a moſt excellent Apple, and is in eating from Eaſter to Midſummer.

38. Dumpling Apple. This is a handſome Apple, and rather above the middle ſize, flat-ſhaped, and of a greeniſh-yellow colour, with ſome faint ſtreaks of red. It keeps till March.

39. Dutch Queening. This is a large Apple, ſomewhat reſembling the Cat's Head in ſhape. The colour is red next the ſun, and green on the other ſide, with ſometimes a little red. This fruit is fit only for the kitchen, and for making cider. It is ripe in January, and keeps till the end of March.

40. Elton's Yellow Kernel, is a handſome middle-ſized Apple, of a yellow colour. This is a good table Apple, and is in eating from January to March.

41. Engliſh Rennet. This is a handſome Apple, beautifully ſtreaked with red, but darkeſt toward the ſun; of a tolerable flavour, but apt to grow mealy when kept too long. It keeps till the middle of May.

42. The Embroidered Apple, is pretty large, and the ſtripes of red very broad, from which circumſtance it takes its name. It is commonly

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uſed as a kitchen Apple, and is ripe in October.

43. Everlaſting ſtriped Apple. This is below the middle ſize, of a conical ſhape. The colour is a ſtriped green toward the footſtalk, and red toward the eye.

44. Fameuſe. This is a pretty large Apple, of a beautiful dark red, with a little yellow on the ſide from the ſun. The fleſh is very white, and full of a rich ſugary juice; and it comes into eating about the latter end of October.

This Apple was introduced from Canada, by Mr. Barclay, of Brompton.

45. Fenouillet, ou Pomme d'Anis, the Fennel, or Aniſe Apple, is a middle-ſized fruit, of a grey colour; the pulp is tender, and has a ſpicy taſte, like aniſeed. It ripens in September and October.

46. Flower of Kent. This is a large handſome Apple, of a yellow colour, and pretty good flavour. It keeps till the middle of April.

47. Fox-whelps, is a ſmall Apple, ſtreaked with red. It is ripe in January. This is a cider Apple.

48. Franklin's Golden Pippin, is a handſome middle-ſized Apple, of a conical ſhape and gold colour, beautifully marked with dark ſpots. This fruit has a fine aromatic flavour, and de-

ſerves the firſt place on the table; but it is a ſhy bearer. It comes into eating about the middle of November.

49. The French Crab is a large handſome Apple, of a deep green colour, with a little red next the ſun. This Apple will keep all the year. It is a good baking Apple, and, if the Summer be warm, pretty good eating. It is moreover a great bearer.

50. The French Codlin is a pretty large Apple, of a conical ſhape, and of a green colour, with red toward the ſun, and comes into eating in January.

51. Fearn's Pippin, is of the ſhape and ſize of a Nonpareil. It is of a beautiful ſcarlet colour next the ſun, and of a golden yellow on the other ſide. It makes a fine ſhow at table, and will keep till the latter end of February.

Laſt Spring I received a beautiful variety of this fruit from Mr. Dredge, of Wiſhford, near Saliſbury.

52. The French Spaniard (from Enmore Caſtle). This is a large Apple, in form of a hexagonal priſm, with the angles a little rounded, and of a yellowiſh-green colour; it is pretty good, and keeps till the latter end of April.

53. The French, or White Rennet, is a large fruit, of yellowiſh-green colour, with ſome grey

ſpots. It has a ſugary juice, and is good either for eating or baking.

54. The Gargey Pippin, is a handſome conical-ſhaped Apple, under the middle ſize, of a greeniſh-yellow colour, with a little red toward the ſun. This is a pretty good Apple, and keeps till May.

55. The Gilliflower, is a fine handſome Apple, red toward the ſun, and of a yellowiſh-green on the other ſide. It is of a fine flavour, and keeps till the latter end of March.

56. The Golden Rennet, is a beautiful Apple, a little flatted; of a fine red colour toward the ſun, and yellow on the other ſide. This is a good eating Apple, and keeps till February.

57. The Golden Ruſſet, is a fine middle-ſized Apple, of a golden-ruſſet colour, from which it takes its name. This is a good Apple, and keeps long.

58. The Golden Pearmain, is a fine Apple, above the middle ſize, of a fine deep red toward the ſun, with a little yellow on the other ſide: when much expoſed to the ſun, it is ſometimes red all over.

59. Golden Mundi. This is a fine handſome Apple, beautifully ſtreaked with red; of a good flavour, excellent for baking, and will keep till January. Mr. Dredge calls this a ſauce Apple.

60. Golden Glocester. This is a handſome middle-ſized Apple, of a flat ſhape, and gold colour, with red toward the ſun. This is a good Apple, and keeps till March

61. The Golden Knob (from Enmore Caſtle), is a handſome, though rather ſmall, Apple, of a fine gold colour, ſometimes inclining to a ruſſet. This Apple has a pleaſant flavour.

62. The Golden Pippin is well known; and the French own it to be of Engliſh origin. It is almoſt peculiar to England; for there are few countries abroad where it ſucceeds well. It is yellow as gold; the juice is very ſweet; the ſkin (eſpecially where expoſed to the ſun), is often freckled with dark yellow ſpots. It is certainly the moſt antient, as well as the moſt excellent, Apple, that we have. It ripens in October, and will keep through the Winter. There are ſeveral varieties of this fruit.

63. The Godolphin Apple, is a very handſome large fine fruit, ſtreaked with red on the ſide next the ſun, and of a yellowiſh colour on the other ſide. It is in eating from the latter end of September to December. I found this Apple growing in the garden of the late Lord Godolphin, in St. James's Park; and have given it the name of the Godolphin Apple, as I have not been able to find it in any Catalogue.

64. Green Dragon. This is a fine large Apple, of an excellent flavour, and pale-green colour. It is rather too large for the table, and is therefore moſtly uſed as a kitchen Apple. It keeps till March.

65. Great, or Large Ruſſet. This is a middle-ſized fruit, of a ruſſet-colour, with a little dark-red toward the ſun. A pretty good Apple, and keeps till April.

66. Griddleton Pippin. This is a large angular-ſhaped Apple, of a green colour, with a little bluſh toward the ſun. It is a baking Apple, and keeps till March.

67. Grumas's Pippin, is about the ſize and ſhape of a Golden Pippin; of a dingy-green colour next the ſun, and of a dull yellow on the other ſide. It is ripe in January, and keeps till April.

68. The Hagloe Crab, is a yellow-coloured conical-ſhaped Apple, below the middle ſize. It is ripe in January; but is only fit for making cider, or for baking.

69. Hall Door. This is a fine large Apple, of a flat ſhape, beautifully ſtreaked with red toward the ſun, and of a greeniſh-yellow on the other ſide. This fruit is of a fine flavour, and is in eating from January till March.

70. Hallingbury. This is a large flat-ſhaped Apple, with large ridges from the baſe to the

crown. It is of a beautiful red toward the ſun, and of a yellowiſh colour on the other ſide and toward the eye.

71. Hampſhire Nonſuch. This is a pretty large well-ſhaped Apple of a greeniſh-yellow colour, ſtreaked with red. It keeps till the latter end of November.

72. Harvey's Ruſſet, ſo called in Cornwall, is a large ruſſet-coloured Apple, with a little red toward the ſun. This is a famous kitchen fruit, and tolerably good raw. It has a muſky flavour.

73. The Holland Pippin, is a middle-ſized Apple, of a flattiſh ſhape. Its colour is yellow, in ſome places inclining to green, with, ſometimes, a little red toward the ſun. This is a pretty good Apple, and keeps till the middle of April.

74. The Hollow-eyed Pippin, is a middle-ſized Apple, of a yellow colour, beautifully ſpotted with red toward the ſun; and the eye is pretty deep. This is a good ſharp-flavoured Apple, and keeps till the middle of May.

75. The Hollow-eyed Rennet of Cornwall, is a handſome flat-ſhaped Apple, under the middle ſize, of a greeniſh-yellow colour, ſometimes intermixed with ruſſet. This fruit is of an excellent flavour, and keeps till April.

76. Hedge Apple, a new fruit of middle ſize and handſome conical ſhape, red toward the ſun, and of a ſtraw-colour on the other ſide. This Apple is of a tolerably good flavour, and keeps till the latter end of April.

77. The Hogſhead Apple, is a ſmall red fruit; the fleſh is red, and the taſte auſtere. This is a cider Apple, ripe in January, and keeps till March.

78. Hubbard's, or the Ruſſet Pearmain. This is a real Norfolk Apple; and, though not handſome, is one of the beſt table Apples. It is of a dark ruſſet colour; ripe in January, and keeps till April.

79. The July Flower, is an angular-ſhaped Apple, of the middle ſize, ſtreaked with red toward the ſun, and of a dull green on the other ſide: it is ripe in December, and keeps till the latter end of April. This ſeems to be a different Apple from the Gillyflower already deſcribed.

80. John Apple, is a middle-ſized handſome fruit, of a green colour, with a little red toward the ſun; and the foot-ſtalk is very ſmall. This is an excellent cider and baking Apple, from Devonſhire; but was noted in Herefordſhire in the time of Mr. John Philips the poet. This Apple is of an excellent flavour, and keeps till March.

81. The Iſle of Wight Pippin, is a handſome middle-ſized Apple, of a greeniſh-yellow colour.

82 The Juneting, or Jenneting, is a ſmall yellowiſh Apple, red on the ſide next the ſun. It is a pretty fruit for early variety, and ripens about the latter end of June or beginning of July.

83. The Kernel Redſtreak, is of a greeniſh-yellow, with broad ſtreaks of a dark-red all over it, and a yellow ground finely ſpeckled with red next the ſun.

84. The Kernel of the Kentiſh Pippin, is a handſome Apple of a light-green colour, with a little red toward the ſun. It is ripe about the middle of November.

85. Kernel Pearmain. This is a ſmall handſome Apple, red toward the ſun, and of a yellowiſh-green mixed with red on the other ſide. It is of a good flavour, and keeps till the middle of May.

86. The Kentiſh Pippin, is a good-ſized Apple, finely ſtreaked with red. It is of a fine flavour, comes into eating about Chriſtmas, and keeps till February.

87. The Kentiſh Nonpareil, is a handſome flat-ſhaped Apple, of a light-ruſſet colour, inclining to red toward the ſun. It is of a good flavour; and keeps till May.

88. King of the Pippins. This is a middle-ſized Apple, of a fine gold colour, a little ſtreaked with red towards the ſun. It is ripe in January, and keeps till the latter end of March, but then becomes mealy.

89. King Apple. This is a middle-ſized Apple, of a conical ſhape; and its colour is that of a beautiful red intermixed with a little yellow on one ſide. This Apple is of a pleaſant ſugary taſte; and keeps till the latter end of April.

90. Kirke's Seedling. This is a large beautiful Apple of a fine red colour towards the baſe, and yellow toward the eye. The footſtalk is ſlender, and the eye large.

91. Kirke's Scarlet Pearmain, is a handſome middle-ſized Apple, of a beautiful red toward the ſun, and a little yellow on the other ſide. It is ripe in January.

92. Kirke's Scarlet Admirable, a good Apple for baking, and of a beautiful ſcarlet colour, is in eating about the month of January.

93. The Kentiſh Fill-Baſket is a ſpecies of Codlin, of a large ſize, and is generally uſed for baking. It is in eating from Auguſt to October.

94. The Kirton, or Crack'd Pippin, is a middle-ſized Apple, of a greeniſh-yellow colour,

with little dark ſpots. The coat is generally rough toward the footſtalk. This is a good Apple for the table, and comes into eating in September.

95. Lady's Finger. This is an excellent table Apple, of a conical ſhape; red next the ſun, and of a yellowiſh caſt on the other ſide. It is of a ſweet pleaſant flavour, and keeps till May.

96. The Large Styre, is a handſome Cider Apple, of a yellow colour, with a little red next the ſun. It is ripe in November.

97. The Liſbon Pippin, is a handſome middle-ſized Apple, of a flat ſhape; a fine red toward the ſun, and of a reddiſh-yellow on the other ſide. The fleſh is firm and has a ſharp pleaſant taſte. It comes into eating in November.

98. Loan's Pearmain, is a large oval-ſhaped Apple, of a dull green colour intermixed with a browniſh-red, which is deepeſt next the ſun. This is a pretty good table Apple, of a ſharp taſte. It ripens in September and keeps till May, but is apt to grow mealy.

99. The London Pippin, or Five Crowned Pippin, is a fine large Apple, of a green colour, ſtreaked with red toward the ſun. This reſembles a Ribſton Pippin, but is larger. It

has a pretty agreeable taſte ; and will come into eating about the latter end of November. Mr. Lindley calls this a real Norfolk Apple, and ſays, it is one of the beſt that the county produces for kitchen and table ; and a moſt abundant bearer. It keeps till the middle of April.

100. Le Calville d' Automne, the Autumn Calville. This is a large fruit, of an oblong figure, and of a fine red colour toward the ſun. The juice is vinous, and much eſteemed by the French.

101. Long Laſter. This is a middle-ſized Apple, of an angular ſhape, and fine yellow colour, with a beautiful red next the ſun. It is of a tolerable flavour ; and keeps till the middle of May, but is apt to be mealy.

102. The Lemon Pippin, is a handſome oval-ſhaped Apple, of a gold-colour. It is of a fine flavour, and will keep till the beginning of March.

103. Long Seam, is a large angular-ſhaped baking Apple, of a pretty good flavour, and light green colour. It keeps till the latter end of January.

104. Lord Cheney's Green, is a middle-ſized Yorkſhire Apple, reſembling the Yorkſhire Greening. It is of a dark green colour, with a little of chocolate-colour next the ſun. This

is a baking Apple, and keeps till the middle of May.

105. Lord Arundel's Apple, is large, of an angular ſhape; the colour is green, with a little dingy-red toward the ſun. This Apple is from France; is good for ſauce, and keeps well.

106. Lord Camden's Rennet, (from Wilderneſs Park in Kent), is a good-ſized ſeedling of a yellow-colour, with a little browniſh-red next the ſun. This is a good flavoured Apple; and keeps till March.

107. Lucas's Pippin, is a handſome middle-ſized, cylindrical-ſhaped Apple; and of a beautiful orange colour. A pretty good fruit, and keeps till the latter end of April.

108. Maiden's Bluſh. This is a ſmall Apple, of a dark mahogany colour next the ſun, but paler on the other ſide, and ſometimes of a greeniſh caſt. The taſte is auſtere, and of courſe this fruit is not fit for the table; but does very well for baking, or for cider. It keeps till the beginning of March.

109. Mansfield Tart. This is a large Nottingham Apple, but moſt known in Yorkſhire. It is handſome and of a green colour, having a little caſt of a browniſh-red, with dark ſpots

next the ſun. A baking Apple, and keeps till February.

110. May Gennet, is rather under the middle ſize, of a greeniſh-yellow colour, ſlightly ſtreaked with red next the ſun. This Apple keeps till April.

111. Major Hemmings's Apple, is a handſome middle-ſized fruit, of a light-green colour, with a little browniſh-red toward the ſun. This is an excellent Apple.

112. The Margil, is an excellent Apple, about the ſize of a Nonpareil. It is of a red colour with ſome yellow on one ſide; continues in uſe from November to the latter end of March; and is often ſold in the London markets for a Nonpareil.

113. The Margaret Apple, is a fine and beautiful fruit, yellow ſtriped with red, of a delicate taſte, ſweet ſcent, and is generally eaten off the tree. It is ripe in Auguſt.

114. Minchall Crab. A handſome middle-ſized Lancaſhire Apple, of a yellow colour, with ſome brown ſpots. This is common in Mancheſter market. It keeps till April.

115. The Monſtrous Rennet, is a very large Apple, turning red towards the ſun, and of a dark-green on the other ſide. It is generally

preſerved on account of its magnitude, as the fleſh is apt to be mealy. It ripens in October.

116. The Mother Rennet, is rather under the middle ſize, of a greeniſh colour, with a little bluſh towards the ſun. The eye is large and deep, and the footſtalk is ſmall.

117. The New-England Pippin, is a large angular-ſhaped Apple, of a green colour, with a little browniſh-red toward the ſun. It has a pretty good flavour, and keeps till March.

118. Newtown Pippin. This is an American Apple, but ſaid to be originally from Devonſhire. It is a fine large Apple, of a greeniſh-yellow colour, and red, with dark ſpots next the ſun. When much expoſed, it is of a beautiful red towards the ſun, and of a gold colour on the other ſide. This Apple has a fine flavour, if it is not kept till it is too ripe, when it becomes mealy. It is in eating from November to January.

119. New Red Muſt, is a fine large Apple, of a pale-red toward the footſtalk, and of a greeniſh colour toward the eye. This is a Cider Apple, and for baking.

120. New Red Pippin. This is a beautiful middle-ſized Apple of a dark-red colour, with a mixture of yellow on the ſide from the ſun. It keeps till March.

121. The Nonſuch is a good bearer, and very fit either for the table or kitchen; the cooks, however, complain that it makes but a very ſmall proportion of ſauce. It is ripe in September and October.

122. Nine Square, a Glouceſterſhire Apple. This is a large angular-ſhaped fruit, of a fine red towards the ſun, and yellow on the other ſide, with a ſmall mixture of red. Keeps till April.

123. The Norfolk Colman, is a middle-ſized Apple, of a mahogany colour towards the ſun, and a dark-green on the other ſide. It keeps till Auguſt.

124. The Norfolk Beefin, is a good-ſized Apple, rather flatted, of a deep red colour towards the eye, but paler towards the footſtalk.

125. The Norfolk Paradiſe is a large Apple, of a dark red colour towards the ſun, and green on the other ſide. This is a nice baking Apple, and of a tolerable flavour for eating. It keeps till the middle of May.

126. The Norfolk Storing, is a pretty large Apple, of a dark red colour towards the footſtalk, and green towards the eye. It is of a pleaſant ſharp flavour, and is in eating from the latter end of January to the latter end of April.

127. Northern Greening. This is a fine oblong Apple, full at the footſtalk, of a pale-green colour, with a little red towards the ſun. It is nearly of an equal ſize from the baſe to the crown, and has a fine flavour. It is ripe in January.

128. The Nonpareil, is a fruit deſervedly valued for the briſkneſs of its taſte. It is ſeldom ripe before Chriſtmas, and, if well preſerved, will keep till May. This is juſtly eſteemed one of the beſt Apples that have been yet known.

129. The Oak Peg, or Oaken Pin, is an oval-ſhaped middle-ſized fruit, of a green colour ſtriped with white. It is very full towards the footſtalk, which is ſmall; and keeps till June.

130. The Old Engliſh Pearmain, is an oval-ſhaped Apple, of a middle ſize, and fine red colour, with a little yellow towards the eye. It is of a pleaſant ſweet flavour; and is in eating from January to March.

131. The Old Red Muſt, is a fine large Apple, ſomewhat reſembling the New Red Muſt both in ſhape and colour, with the addition of dark red ſpots toward the footſtalk.

132. The Old Red Pippin, is a middle-ſized Apple, red towards the ſun, and of a greeniſh

colour on the other ſide. This is a good Apple and keeps till March.

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133. Orange Pippin. This is about the ſize of a large Golden Pippin; of a beautiful gold colour, with a little pale-red towards the ſun. This is a handſome Apple, of a good flavour, and makes a fine appearance at table. It is in eating in October, and will keep till March, but gets flat in the taſte when too long kept.

134. The Orleans Pippin, is a ſmall flat-ſhaped Apple, of a dark red colour; reſembling the Orleans Plum.

135. Paradiſe Pippin. This is a handſome middle-ſized Apple of a reddiſh caſt. It comes into eating in October, but will not keep. It grows mealy when too ripe.

136. Pauſon. This Apple is below the middle ſize, of a conical ſhape, and of a greeniſh yellow or light green colour. It is ripe in January.

137. Pile's Ruſſet, is a middle-ſized longiſh-ſhaped Apple, ruſſet about the footſtalk, yellow towards the middle, and of a browniſh red about the eye. This is a very firm fruit, of a ſharp acid flavour, but is much eſteemed for baking. It ripens in October, and will keep till April.

138. Pigeonette. An Apple rather below the middle ſize, of a conical ſhape. It is of a pink colour, pretty dark towards the ſun. One received from the State of La Vilherie, near Morlaix, in Lower Britanny, by L' Abbe Joſſrin, exactly correſponds with this deſcription.

139. Pearſon's Pippin, is a nice Apple, about the ſize of a large Golden Pippin, of a yellowiſh colour, and the form a little flat. In Devonſhire they put theſe Pippins into the oven juſt after the bread is drawn, laying a weight over them to flatten them, in the ſame manner as they do the Beefin in Norfolk, and bring them to table as a ſweetmeat.—I brought ſome cuttings of this tree from Nutwell near Exeter, which I grafted on ſome trees in Kenſington-gardens. This is a very good deſſert Apple, and keeps till March.

140. Pomme Griſe *. This is a fine Apple, from Canada, of a flattiſh form, and ruſſet colour, ſtreaked beautifully with red. It ripens late, and keeps till March. This is an excellent eating Apple.

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* The Pomme Griſe was introduced into this country by Mr. Alexander Barclay, of Brompton, well known for his ingenuity in bleaching of wax. He is a great lover of horticulture, and has raiſed ſeveral new ſorts of Gooſeberries from ſeed.

141. Pomme d' Api, is much valued for its colour, being of a bright red. The tree is a good bearer, and the fruit is not ſubject to be ſhaken with high winds. The fruit ſhould be ſuffered to hang on the tree till October or November, if the froſt do not ſet in. It comes into eating in February and March, and keeps long; but is more admired for its beauty than its flavour.

142. Pomme Violette, the Violet Apple, is a pretty large fruit, of a pale-green, ſtriped with red towards the ſun. It has a ſugary juice, and a flavour of violets, from which it takes its name. It ripens in October, and continues in eating till February.

143. Pomroy, or King's Apple. This ripens nearly as ſoon as the Juneting; and, though not ſo beautifully coloured, is larger and much better taſted. There is a variety which is a winter Apple.

144. Pound Pippin. This is a large handſome Apple of a greeniſh colour; and is good for baking. It is ripe in January.

145. Poor Man's Profit, is a dingy-coloured oval-ſhaped Apple below the middle ſize. It is raiſed freely from cuttings; and keeps till January.

146. The Queening, from Glocesterſhire, is a large Apple of an irregular ſhape, having large ridges from the baſe to the crown. It is of a dark red, but deepeſt towards the ſun. This is a good Cider Apple, and bakes well. It keeps till the latter end of November.

147. The Queening Kernel. This is a fine Apple, above the middle ſize, of a deep red colour, covered very thick with ſmall whitiſh ſpecks. This is a tolerable good Apple, and keeps till the latter end of April.

148. The Queen's Pippin, is a ſmall handſome Apple, of a yellowiſh-green colour, ſometimes inclining to red on the ſide next the ſun. This is a fine-flavoured Apple, very fit for the table. It comes into eating in January, and keeps till May; but is apt to grow mealy when kept too long. The tree never grows to the height of other apple-trees.

149. The Quince Apple, is a middle-ſized fruit, of a yellow colour, with a little red toward the eye. It is of a pleaſant ſharp flavour; ripe in January, and keeps till April.

150. Ramborn. This is a large fruit, of a fine red next the ſun, and ſtriped with a yellowiſh green. It ripens about the middle of September.

151. Red Pearmain. This is ſmaller than the Pearmains in general. It is of a deep red, with a little yellow on one ſide. A pleaſant ſweet Apple; and keeps till the middle of April.

152. The Red Streak, is a handſome middle-ſized Apple, beautifully ſtreaked with red. This is a good Cider Apple. Ripe in January.

153. The Red Streak Seedling, from Longleat. This is from the Dorſetſhire Red Streak, and is a beautiful Apple, of a yellow colour ſtreaked with red, particularly next the ſun. This Apple is ſold in the Bath and Briſtol markets in the latter end of September and beginning of October. It is a pretty good Apple, but does not keep long.

154. Red Bag. This is a beautiful large Herefordſhire Apple, of a longiſh ſhape, ſtreaked all over with a dark red; and is in eating about the middle of October.

155. The Red Muſt reſembles the Old Red Muſt in ſhape; but is of a dark red colour toward the ſun, and yellow on the other ſide. It is ripe about the middle of November.

156. Rennette Griſe. This is a middle-ſized fruit, of a grey colour next the ſun; it is a very good juicy Apple, of a quick flavour, and ripens about the latter end of October.

157. Red Sweet. This is a ſmall round Apple, red towards the ſun, and of a greeniſh-yellow on the other ſide. This is a good bearer, and much eſteemed among the country people of Cornwall for making a kind of tart or pie, one of their dainties at Chriſtmas. It is a pretty good table Apple, and keeps till March.

158. The Ribſton Pippin *, is a fine Apple, from Ribſton Hall, near Knareſborough, in Yorkſhire. It is a little ſtreaked with red towards the ſun, and yellow on the other ſide. It is one of the beſt Apples for eating and baking, and continues in uſe from the end of October till April. It bears very well as a dwarf, and no garden ſhould be without it.

159. Robinſon's Pippin, is about the ſize of a Golden Pippin, of a green colour, and partakes of the flavour both of a Golden Pippin and a Nonpareil. It keeps till May.

160. The Royal George, is a fine large Apple, of a beautiful yellow on one ſide and green on the other. It is a good Apple, and keeps till June, but then grows mealy.

161. Royal Nonpareil. This is a handſome Apple, of a flattiſh ſhape, with a ſmall footſtalk and fine eye. It is about the ſize of a

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* The firſt tree of this kind was found growing in Sir Henry Goodricke's Park.

common Nonpareil, of a green colour, with red towards the ſun. It is ripe in January, and keeps till the latter end of March.

162. Royal Pearmain. This is a fine large Apple, beautifully ſtreaked with red. It is ripe in January and keeps till March. A pretty good Apple.

163. The Royal Ruſſet, or Leather-coat Ruſſet, is a large fruit, and one of the beſt kitchen Apples that we have. It is alſo a pleaſant eating Apple, and a great bearer; and is in uſe from October to April.

164. The Ruſſet Pippin, is of a rough ruſſet colour towards the ſun, and of a green colour, ſometimes inclining to yellow, on the other ſide. This is a good keeping Apple, and fit either for baking or eating raw. It is ripe about the beginning of February, and keeps till March.

165. Red, and White, Calville are good Apples of a vinous taſte; ſome have a red, and ſome a white pulp; and the white is reckoned of a moſt delicious flavour. They are in eating in September and October.

166. Summer Pearmain. This Apple is ſtriped with red next the ſun; the fleſh is ſoft, but ſoon turns mealy; ſo that it is not much

eſteemed. It is in eating in Auguſt and September.

167. The Silver Pippin, is a handſome middle-ſized conical-ſhaped Apple, of a fine yellow colour, with a faint bluſh towards the ſun. The fleſh is firm and very white, and of an excellent flavour. It keeps till the middle of May.

168. Seek no Farther, is a handſome Apple, rather above the middle ſize, of a pale-green colour, a little ſtreaked with red. It is of a pleaſant, though not very high flavour; and is in eating from January to May; but is apt to be mealy when kept longer than the beginning of April.

169. Sykehouſe, is a handſome middle-ſized Apple, from Sykehouſe in Yorkſhire, of an orange colour towards the ſun, ſometimes inclining to red, and yellow on the other ſide. This is a fine eating Apple; ripe in January, and keeps till April.

170. Stone Pippin. This Apple is of a green colour ſtreaked with red towards the ſun. It is of a ſharp taſte, and is in eating from January till the middle of May.

171. The Stoup Codlin, is a large handſome Apple, of a pale-green colour, with a little red

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towards the ſun. This is a baking Apple, of a pleaſant taſte. It keeps till May.

172. The Striped Nonpareil Ruſſet, is a handſome Apple, of a greeniſh-ruſſet colour, with a little browniſh-red towards the ſun. It is about the ſize of a large Nonpareil, is ripe in January, and keeps till March.

173. Spice Apple. This is a handſome middle-ſized angular-ſhaped Apple, of a yellow colour, and of a pleaſant flavour. It is ripe in January, and keeps till March.

174. Skerm's Kernel, is a conical-ſhaped middle-ſized Apple, beautifully ſtreaked with red, deepeſt towards the eye, and having a good deal of yellow towards the footſtalk. It is ripe in January, and keeps till March.

175. The Spaniard, is a good-ſized Apple, of a greeniſh-yellow colour. It is ſaid to have taken this name from the grafts being at firſt brought from Spain. It is uſed for tarts in Cornwall, but is a very indifferent Apple to eat raw, and is moreover a ſhy bearer. It will keep till April.

176. The Spice Rennet, is a handſome Apple below the middle-ſize, red towards the ſun, and yellow on the other ſide.

177. The Spaniſh Pearmain, is a middle-ſized oblong Apple, of a carnation colour, and dark-

red towards the ſun. This is a pretty good Apple, and keeps till the beginning of May.

178. The Spaniſh Onion, is a handſome round Apple of a ruſſet colour, with a dull-red towards the ſun. This Apple, which is rather below the middle ſize, is very good for the deſſert, and keeps till March.

179. Sharp's Ruſſet, is below the middle ſize, of a browniſh-red colour toward the ſun, and a pale green on the other ſide. It is ſhaped like the fruſtrum of a cone; is of a pretty good flavour, and keeps till May.

180. Spencer's Pippin, is a middle-ſized Apple, of a yellowiſh colour, with many dark ſpots. A baking Apple, and keeps till the middle of May.

181. Tankerton. A conical-ſhaped yellow Apple, with ſometimes a little bluſh towards the ſun. This is an excellent ſauce Apple, and bakes well. It is of an agreeable taſte, but too large for the table. It will keep till February.

182. The Tranſparent Apple was introduced from St. Peterſburg; but is more curious than uſeful: a tree or two, therefore, will be ſufficient for a garden. It ripens in September and October.

183. The Trevoider Rennet, is a ſmall handſome ruſſet-coloured Apple, of an excellent flavour, and will keep till May.

184. White Corpendu. This is a middle-ſized long-ſhaped Apple, of a yellowiſh colour. It is a good eating Apple, and ripens in January.

185. The Ward Apple, is a beautiful flat-ſhaped Apple, rather below the middle ſize, of a fine red towards the eye, and of a yellowiſh-green towards the footſtalk. It is a ſharp-flavoured fruit, and keeps till June.

186. Wheeler's Ruſſet, is of middling ſize, the fleſh firm, and of a quick acid flavour; it is an excellent kitchen fruit, and will keep long. It ripens in October, and keeps till May.

187. The Wine Ruſſet, is a middle-ſized conical-ſhaped Apple, of a dark ruſſet colour, and ſharp flavour. It keeps till the latter end of April.

188. Wheeler's Extreme, reſembles the Pomme Griſe, and is about the ſize of a Nonpareil. This is a flat-ſhaped Apple, beautifully clouded with red on a yellowiſh ruſſet ground; is of an excellent flavour, and keeps till April.

189. White Muſt. This is a middle-ſized handſome Apple, of a greeniſh-yellow colour, with a little red towards the ſun; the flavour is rather tart, but agreeable. It is ripe in January.

190. The Whitmore Pippin, is a good-ſized handſome Apple, ſtreaked with red towards the ſun, and of a pale yellow on the other ſide. It has firm fleſh of a tolerably good flavour, and is in eating from November to the latter end of April.

191. The Wiltſhire Cat's-head, is a large handſome Apple, red towards the ſun, and green on the other ſide. This is a very fine baking Apple, and of a good flavour. It is ripe in January.

192. The Winter Pearmain, or Hereford-ſhire Pearmain, is of a fine red next the ſun, and ſtriped with red on the other ſide; the fleſh is juicy and ſtews well. It is fit for uſe in November, and if properly managed will keep till the latter end of March.

193. The Winter Pomroy, is a pretty large conical-ſhaped Apple, of a dark-green colour, a little ſtreaked with red towards the ſun. The coat is rather rough. It is a good baking Apple, and keeps till January.

194. The Winter Box-Apple, is a middle-ſized fruit, of a light-green colour, and keeps till February.

195. The Woodcock. This is a good-ſized Apple, of a dark-red next the ſun, and paler, with a little mixture of yellow, on the other ſide.

It is ripe in January and keeps till March. This is a good Cider Apple.

196. Wright's Nonpareil, a Salopian Apple, is a great bearer, of a good ſize, and a little flatted. It is a good kitchen Apple, and keeps till June. The tree is ſmaller in ſize than moſt other Apple-trees.

197. The Yorkſhire Greening is a good-ſized flatted Apple, of a dull-red colour, with a little green towards the eye. It keeps till Auguſt.

*Those in the following List marked thus *, are most esteemed for eating raw; those †, for baking or boiling; and those ‡, for making of Cider. The Words in Italick are names by which the preceding Fruit is frequently known.*

Aged Pippin.
Aromatic Broading.
Summer Broading.
Autumn Pearmain.
† Barcelona Pearmain.
† Beaufin.
Lincolnſhire Beaufin.
Yorkſhire Beaufin.
Norfolk Beefin.
‡ Black Moor.
Bontradue.
* Cawood Timely.
* Chardin's Sans-pareil.
Cheſter Pearmain.
† Coſtard.
Cotton Pippin.
Covadies.
Darling Pippin.
Derbyſhire Crab.
Devonſhire Buckland.
Double-bloſſom Scarlet Crab.
Dowſen's.
Dutch Paradiſe.

* Early Nonpareil.
‡ Everlaſting Hanger.
† Eyer's Greening.
Frank Rambour.
Frazer's.
French Pippin.
French Paradiſe.
‡ Gennet Moyle.
Golden Doucet.
Golden Noble.
Golden Luſtre.
Gray Noble.
Gray's Pippin.
† Green Blundrel.
† Green Pearmain.
Havers's Monſter.
Hay's fine large baking Apple.
‡ Hertfordſhire Underleaf.
Hughes's New Golden Pippin.
June Keeping.
Kipling's Pippin.
Kirke's Incomparable.
† Kitchen Rennet.
† Lancaſhire Houſewife.
Large Yellow Pippin.
* Large Golden Pippin.
Baker's Golden Pippin.
Large Apple Williamſon.
Lawman's.
† Lincolnſhire Rennet.
Lord Iſlay's Pippin.
Neal's Summer Kentiſh.
† New England.
New York Pippin.
Nutmeg.
Orgeline, or Orjeline.
* Oxhead Pearmain.
Earl of Yarmouth's Pearmain.
Pie Pie.
Pine-Apple Ruſſet.
Pipy Ruſſet.
* Pomphilia.
Queen's Pearmain.
Red-fleſhed Beaufin.
Red Vacan.
Ronald's Queen Charlotte.
† Robine.
‡ Royal Wilding.
Scarlet Pearmain.

Sheppard's Ruſſet.
Siberian Crab.
Sir Charles Wager's.
Spit.
Stout Buckland.
† Striped Beaufin.
Stubbard.
‡ Styre.
‡ Summer Redſtreak.
Summer Pippin.
Summer Ruſſet.
† Summer Colman.
Summer Majetin.
Ten Shillings.
Tom Two Years Old.
† Tranſparent Codlin.
Virgin.
* White Pippin.
White ſour.
Welch Lemon Pippin.
Whykins's Pippin.
Wine ſop.
‡ Winter Redſtreak.
† Winter Colman.
† Winter Broading.
Winter Majetin.
Yellow Buckland.

N. B. The Siberian Crab and the Double-bloſſom Crab are good for preſerving.

Sorts of Apples proper for a small Garden.

The Juneting; Golden Pippins; Noneſuch; Ribſton Pippin; Nonpareils; Queen's Apple; Sykehouſe; Golden Rennet; Aromatic Pippin; Grey Leadington; Scarlet Pearmain; Lemon Pippin; Pomme Griſe; and French Crab; different ſorts of Ruſſetins and Codlins, for baking.

I have taken all the pains that I could to aſcertain the real names of the beſt Apples;

but the varieties are almoſt infinite: it is, therefore, hoped that if the ſame Apple ſhould in ſome few inſtances be found under different names, it being almoſt impoſſible, amid ſuch a variety, to avoid a miſtake of that kind, the candid reader will have the goodneſs to view it with indulgence.

On the Chooſing, Planting, Pruning, and Training, of Apple-Trees.

In chooſing Apple-trees from the Nurſery, it may be ſufficient to obſerve, that they, as well as Apricot and Peach trees, ſhould have ſtrong, ſtraight, and clean ſtems.

Sufficient inſtructions have already been given for preparing the borders and planting the trees; which will alſo be applicable here. The ſame directions for heading muſt be obſerved, according to the ſeaſon and time of the buds breaking forth, leaving the number according to the ſtrength of each tree; cutting as cloſe as poſſible to the top bud, that the leading ſhoot may the more eaſily cover the wound; and conſtantly obſerving to rub off all the buds that come up by the ſide of the leading ſhoot, which would otherwiſe rob it of its nouriſhment and ſtrength, and ſo prevent it from making a fine leader. [*See* PLATE VI. *Fig.* 1.] Remember to cut it annually to the length of from nine to eighteen inches, according to its ſtrength, till the tree is got to that height to which you would have it run, and according to the extent of the ground; which height may be from eight to twelve feet. By theſe means the trees will throw out horizontal branches on every ſide, and ſoon form handſome heads for Dwarfs.

I would adviſe not to ſuffer the Dwarf-trees to run higher than twelve feet *; otherwiſe they will become naked at bottom, the fruit will be liable to be blown down, and the tops broken by high winds.

In heading old decayed Apple-trees, for the ſake of ſymmetry, it will be neceſſary to cut at the forked branches as near as can be to the upper ſide of the fork, cutting them in a ſloping manner to carry off the wet, at the ſame time rounding the edges. You may begin at the lower branches, cutting juſt above the lower fork; and, proceeding upwards, cut the reſt of the branches from one to ſix joints, or forks, according to their ſtrength, till you have finiſhed cutting-in the whole head. If any of theſe branches ſhould have the canker, all the infected part muſt be cut out. When the tree is all prepared, apply the Compoſition immediately, beginning at the top of the tree, and finiſhing with the powder of wood-aſhes and burnt bones, as you deſcend; which will ſave it from being rubbed off during the operation; and the Compoſition will prevent the ſun and air from injuring the naked inner bark. A tree thus prepared will, in the courſe of three or four years, produce more and finer fruit than a maiden tree that has been planted upwards of twenty years.

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* From 8 to 12 feet will be found a very convenient height.

It is hoped that the above directions, if properly attended to, will be ſufficient to enable any one to bring old decayed trees into a healthy bearing ſtate.

In large Orchards and Gardens, it may be neceſſary, at firſt, to head down only every other tree; cutting ſome of the branches of the reſt, which are in a decayed and cankery ſtate and will bear no fruit. This will be preparing them to throw out new wood, and furniſh the tree much ſooner with bearing branches. In ſuch a ſeaſon as the preſent (1800), when there is a blight and general failure of crop throughout the kingdom, the operation may be performed in Summer, in the months of May, June, and July, and even ſo late as Auguſt, which will ſave a ſeaſon. As at this time Gentlemen are generally in the country, they could have the pleaſure of ſeeing this performed under their own direction. I would, however, recommend the performing the operation as early as poſſible; for by ſo doing the wood will be the ſtronger.

When the trees are become hollow, the ſame method ſhould be followed as is directed for Plums; but by no means cut them down unleſs the tops are quite decayed; obſerving to cut the looſe rotten wood clean out of the hollow and other decayed parts, applying the Compoſition. At the ſame time remember to open the ground, and cut out all the rotten parts that may be found in the lower part of the ſtem, together with all the decayed roots, which, if this be not done, will infallibly injure the freſh wood and bark, and prevent a cure from being effected.

I would recommend heading down all Apple-trees that are much cankered and have ill-ſhaped heads; for by ſo doing much labour will be ſaved, and the trees will amply pay the Proprietor.

Never ſhorten the young branches, except they are very thin, when it will be neceſſary to do ſo to fill the trees with young wood: nor prune any of the young ſhoots the ſecond year (I mean the year after they are cut), as many of the eyes, almoſt to the end of the ſhoot, will, if it be ſtrong, become fruit-buds next year; and ſo on every year.

In the month of May in the firſt year after the trees have been ſo cut, it will be neceſſary to go over them, and rub off, with your finger and thumb, all the ſuperfluous young ſhoots; leaving from three to ſix eyes on each ſhoot, according to the ſize and ſtrength of the branch cut. Theſe ſhoots will bear from three to four years; by which time they will be pretty much exhauſted by the great quantity of fruit produced from them: they ſhould then be cut down to two eyes to produce new wood.

I always leave three different years' branches on the tree, when the firſt ſhoot, *d*, is cut off at *e*, [*See* PLATE VI. *Fig.* 2.] You will obſerve the next ſhoot, *f*, to be full of fruit-buds, if it has not been ſhortened; when it begins to grow weak, cut it off at *g*. The next cutting muſt be at *i*, when the branch *h* is tired of bearing. Proceed thus all over the tree with care and attention, and you will ſoon perceive the advantages of this method of pruning above the common mode; for by it you will be able to keep your trees in a conſtant ſtate of bearing, which, if left to nature, would only produce a crop of fruit once in two or three years. Always remember, when the ſhoot that has done bearing is cut off, to apply the Compoſition immediately, and to rub off the ſhoots where they are too numerous.

The beſt time to prune Apple-trees is in the month of April, or in May, after the Peaches, Nectarines, and Cherries are pruned *.

The ſmall ſhoots that croſs each other ſhould be cut off, leaving the ſtrongeſt to fill up the tree, and make a fine handſome head. The ſuckers that ſpring from the root ſhould be carefully grubbed up, and the ſide-ſhoots from the ſtem cut off; for, if left to grow, they will greatly weaken the tree. The knobs, where old branches have been cut off, ſhould alſo be pared away, leaving the ſurface of the tree as

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* Soon after this pruning, about the middle of May, it will be proper to look over the trees, and to pick off any caterpillars that may be on them.

You will then ſee what ſhoots are infected with the canker, and which might have eſcaped your notice at the time of pruning; and, wherever you obſerve the leaſt appearance of infection, which may be known by the wood appearing of a browniſh colour, the ſhoot muſt be cut down till you come to the ſound white wood.

ſmooth as poſſible; then apply the Compoſition; the young bark will ſoon begin to grow, and by degrees cover the old wounds with a freſh ſmooth ſurface, and thus prevent the canker from gaining ground on the tree. I have ſeen ſome old wounds of conſiderable ſize healed over in one year.

The trees which I pruned and dreſſed, as above directed, in the courſe of the Summer 1795, are all perfectly cured, the wounds being filled up with ſound wood, and covered over with new bark: they all continue in a healthy ſtate, and bear fine handſome fruit.

I have adviſed ſeveral nurſerymen about London, particularly Meſſrs. Gray and Wear at Brompton Park Nurſery, Kenſington Gore, and the late Mr. Malcolm of Stockwell, to head down their Apple-trees after the ſeaſon of drawing for ſale is over.

Meſſrs. Gray and Wear have headed a great many of ſuch trees as were formerly thrown to the faggot-pile, and have been amply recompenſed for their trouble. Trees thus headed down, provided the ſtems be ſtrong, will, in the firſt and ſecond year, produce as much fruit as will refund the purchaſe-money; beſides, a great deal of time will be ſaved, which would be loſt by planting younger trees.

If you can procure trees of the above deſcription that have been headed down three or more years, they will be all covered with fruit-buds, and, if carefully taken up and planted in the Autumn, if the ſeaſon proves favourable, you will have a tolerable crop of fruit the firſt year. Such trees muſt not be headed down like maiden-trees, but only thinned off where the branches run acroſs and rub againſt one another, which ſhould never be ſuffered.

From what has been ſaid, I hope that gentlemen and others will not be blind to their own intereſt; but that they will give the practice a fair trial, which, if properly executed, will not fail to turn out to their ſatisfaction. Independent of the great advantage to be derived from the increaſe of crops, inſtead of decayed, moſs-grown trees, bearing only a few ſmall hard and kernelly fruit, they will have the pleaſure of ſeeing fine healthy clean trees loaded with large beautiful and well-flavoured fruit; which, to thoſe who have a taſte for gardening and rural affairs, will be no ſmall conſideration.

I would never recommend training of Apple-trees as Eſpaliers; for, by doing ſo, the air is kept from the quarters of the garden; and by conſtant pruning and cutting-off all the ſide-ſhoots which you cannot tie to the Eſpaliers, you prevent them from bearing, and, moreover, bring on the canker.

When Dwarf trees have handſome heads, you will get more and much finer fruit from one of them than from ſix Eſpaliers; at the ſame time a free air is admitted to the crops in the quarters, and the conſtant expence of ſtakes and labour, in laying the trees to the Eſpaliers, is ſaved.

Eſpaliers may be converted into Dwarf Standards by ſhortening the branches at different lengths, ſo as that they may be able to ſupport themſelves without the ſtakes; but not to ſhorten them all regularly; and if cut with judgment, as near to a leading ſhoot, or an eye, as poſſible, they will in the courſe of two years form fine heads, and in the third year will bear ſix times as much fruit as they did in their former ſtate, and of a finer flavour.

The ſame method of pruning already laid down for Standard Apple-trees is alſo applicable to Eſpaliers.

The borders where you make your croſſings in gardens ſhould be ſix or eight feet broad at leaſt, to let the trees ſpread on each ſide, at the diſtance of twelve feet from tree to tree, and they ſhould be well trenched, two feet and a half deep at leaſt. If there ſhould be gravel, or ſour clay, it muſt be taken out, and good mould put in its place; leaving the ground as rough as poſſible, for the froſt and rain to mellow it. When you level the ground it ſhould be done after rain: you may then ſow ſome ſmall crops in the borders; ſuch as Lettuce or Spinage, or Cabbage for tranſplanting; but let not any of the Braſſica tribe come to full growth. Leaving Cabbage and Broccoli on borders, near fruit-trees, draws the ground very much, fills the borders with inſects, and alſo prevents the ſun and air from penetrating into the ground.

When the ſun can have free acceſs to the border, it adds much to the flavour of the fruit. If you can ſpare the ground on the croſs-borders in Winter, it will be of great ſervice to the trees to ridge it up as looſe as you can, and let it lie in that ſtate all Winter, to mellow and ſweeten.

If the ſoil be ſtrong, I would recommend planting of Apple-trees that are grafted on Paradiſe Stocks; but if the ſoil be light, free Stocks will do much better.

When the ground is a ſtrong clay or brick earth, mix it with old lime-rubbiſh or coal-aſhes, ſtreet-dung or ſand: but what I uſe for the borders againſt the walls, and which I prefer to every other manure, is a vegetable mould produced from leaves of trees, which may be obtained in the following manner:

Collect annually as many loads of leaves as you conveniently can, which make up into hot-beds for late Melons and Cucumbers, and for early potatoes, &c. Firſt plant the beds with early Potatoes; at the ſame time ſow Raddiſh and Lettuce ſeeds mixed together. When the Raddiſhes are pulled, thin the Lettuces, leaving a ſufficient quantity for a crop; by the time the Lettuces are fit for cutting, the Potatoes begin to cover the bed. After the Lettuces are all cut, you ſhould put ſome of the leaf-mould cloſe up to the ſtems of the Potatoes, which will run very faſt into the freſh manure, and produce a fine early crop. When you have dug up the Potatoes, take off all the fine vegetable mould till you come to the leaves that are not yet rotten; then with a fork turn up the leaves, adding ſome freſh leaves at the ſame time, which will cauſe a freſh heat to come up in the bed; when this is done, put on the lights and keep them cloſe for three or four days: if the weather be fine and clear, there will, by that time, be a fine ſweet gentle heat.

You may then ſow or plant Melons or Cucumbers in the beds.

When the heat begins to decline, and the fruit to ſwell, put a freſh lining of leaves, two feet and a half broad, round the beds. The beds may be broken up the ſecond Winter; by which time you will find the top part of them rotted to a fine black vegetable mould, which will be the beſt manure for the borders againſt the walls.

A good coat of this manure once in two or three years will be ſufficient for the borders where the wall-trees ſtand, and much better than dung, which I by no means approve of for trees, unleſs it be perfectly rotten and mixed up with mould.

Some of the leaves will be found not quite rotten at the bottom of the beds; theſe may be mixed up with freſh dry leaves from the park, garden, &c. and uſed for making new beds.

Of Grafting old Apple-Trees.

It frequently happens, that, through ſome miſtake or other, after waiting ten or twelve years for a tree to come into a bearing ſtate, it is then found that the fruit is neither fit for the table nor kitchen; in ſuch caſe, we always graft them the following Spring, obſerving to graft on the fineſt and healthieſt ſhoots, and as near as poſſible to the old graft, and where the croſs-ſhoots break out: by ſo doing, you will have ſome fruit the ſecond year; and in the third, if properly managed, you will have as much as on a maiden-tree of fifteen years ſtanding.

The canker, if any, muſt be carefully pared off the branch, and the ſcion muſt be taken from a ſound healthy tree.

Whenever an inciſion is made for budding or grafting, from that moment the canker begins. I would, therefore, recommend to thoſe employed in budding or grafting, as ſoon as the inciſion is made, and the bud or graft inſerted, to rub in with the finger, or a bruſh, ſome of the Compoſition before the baſs is tied on; then cover the baſs all over with the Compoſition as thick as it can be laid on with a bruſh, working it well in. If this operation be performed in a proper manner, and in a moiſt ſeaſon, it will anſwer every purpoſe, without applying any grafting clay.

This I have frequently done, and found it ſucceed perfectly to my wiſhes. Obſerve, not to ſlacken too ſoon the matting which is wrapped round the bud; for in that caſe you will find the inciſion opened, which very often occaſions the death of the bud.

If nurſerymen and gardeners would give this method a fair trial, and uſe the ſame Compoſition

ſition as I uſe for curing defects in trees, inſtead of loam and horſe dung (which binds ſo hard as to prevent the rain and moiſture from penetrating to the graft to moiſten the wood and bark), they would find that the grafts would ſucceed much better. The Compoſition, for this purpoſe, ſhould be rather ſofter than grafting-clay generally is; and, inſtead of applying ſo large a maſs as is generally done of clay, it need not, in moſt caſes, be more than two or three inches in circumference.

CHAPTER VII.

OF PEARS.

Different Sorts of Pears deſcribed—Of Planting, Heading, Pruning, &c.—Experiments on old Trees—A comparative Statement of the Produce of Pear-Trees, by the old and new way of Pruning and Training—Of Trees headed down—Remedy for the Canker, &c.

THE Cultivation of the Pear is, undoubtedly, of conſiderable antiquity; for Pliny mentions no leſs than twenty kinds, and Virgil five or ſix.

Linnæus arranges Pears in the fourth ſection of his twelfth Claſs, along with Apples and Quinces.

The Pear-tree comprehends ſeveral varieties, ripening in ſucceſſive order from July to October.

The Pears commonly propagated in England are as follow; viz.

1. The Little Muſk Pear, commonly called the Supreme. This fruit, when ripe, is of a yellow colour; the juice is ſomewhat muſky; and, if gathered before it be too ripe, it is a good Pear. It ripens about the latter end of July, and continues good only a few days.

2. The Chio Pear, or Little Baſtard Muſk Pear. This is pretty much like the other, but ſmaller. The ſkin, when ripe, has a few ſtreaks of red next the ſun.

3. The Green Chiſſel, or Haſtings Pear, is a middle-ſized fruit; it always remains green, and is full of juice when ripe. It ripens in the beginning of Auguſt.

4. The Red Muſcadelle, is a large early Pear, of great beauty; the ſkin is of a beautiful yellow ſtriped with red, and the fleſh has a rich flavour. This ſometimes produces two crops in a year; the firſt about the end of July, and the ſecond in September.

5. The Little Muſcat, is a ſmall Pear, the ſkin very thin, and of a yellowiſh colour when ripe,

ripe. This fruit has a rich muſky flavour, but will not keep long. It is ripe about the beginning of Auguſt.

6. The Lady's Thigh, commonly called in England Jargonelle, is of a ruſſet green colour from the ſun, but towards it inclining to an iron colour; the fleſh is breaking, and has a rich muſky flavour. It is ripe about the middle of Auguſt.

7. The Windſor Pear, has a ſmooth ſkin, and, when ripe, is of a yellowiſh-green colour; the fleſh is very ſoft, and, if permitted to hang but two or three days after it is ripe, grows mealy and is good for nothing. It becomes ripe about the latter end of Auguſt.

8. Jargonelle *, commonly called Cuiſſe Madame. This is certainly the true French Jargonelle; and the Pear which commonly goes by that name in England is the real Cuiſſe Madame, or Lady's Thigh; and it is very probable that the names have been changed in coming to this country. This Pear is ſomewhat like the Windſor; the ſkin is ſmooth, and of a pale green colour. This is a plentiful bearer; but the fleſh is apt to be mealy if it

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* This Pear bears beſt on Standards.

ſtands to be ripe, which is about the middle of Auguſt.

9. The Orange Muſk, is of a yellow colour ſpotted with black; the fleſh is muſky, but very apt to be dry. It ripens about the latter end of Auguſt.

10. The Great Blanquet, or Bagpipe of Anjou. This Pear has a ſmooth ſkin of a pale-green colour; the fleſh is ſoft, and full of juice of a rich flavour. It ripens about the middle of Auguſt.

11. The Little Blanquet Pear, is much leſs than the former; of a pale colour, and the fleſh tender and full of a rich muſky juice. It ripens about the latter end of Auguſt.

12. The Long-ſtalked Blanquet Pear, has a very ſmooth ſkin, white, and a little coloured towards the ſun, and is full of a rich ſugary juice. It is ripe at the latter end of Auguſt.

13. The Skinleſs Pear, or Early Ruſſelet, is of a reddiſh colour, the ſkin extremely thin, and the fleſh melting and full of a rich ſugary juice. It ripens in the latter end of Auguſt.

14. The Muſk Robine Pear, or Queen's Pear (alſo called the Amber Pear), is ſmall, and of a yellow colour when ripe; it has a rich muſky flavour, and is a great bearer. This Pear ripens about the latter end of Auguſt.

15. The Muſk Drone Pear, has a ſkin of a yellow colour when ripe, and a rich muſky taſte; but is apt to grow mealy if left too long on the tree. It ripens about the beginning of September.

16. The Red Orange Pear, is of a greeniſh colour; but the ſide next the ſun changes to a purple colour when ripe; the fleſh is melting, and the juice ſugary, with a little perfume. It ripens in the beginning of Auguſt.

17. The Caſſolette, or Green Muſcat, is a ſmall greeniſh Pear with ſome ſpecks in the ſkin. It is full of a rich perfumed juice, and ripens in the latter end of September.

18. The Great Onion Pear, Brown admired, or King of Summer, is of a browniſh colour next the ſun, and is ripe in the beginning of September.

19. The Muſk Orange Pear. The ſkin is green, and the fleſh melting. It ripens in the beginning of September.

20. Avorat, or Auguſt Muſcat. This Pear has a ſmooth ſkin of a whitiſh yellow colour; the juice is richly ſugared and perfumed, and it is eſteemed one of the beſt Summer Pears yet known. It is a great bearer, and ripens in the beginning of September.

21. The Roſe Pear, or Thorny Roſe. This is ſhaped like the great Onion Pear, but much larger, of a yellowiſh-green colour, but a little inclining to red next the ſun. The fleſh is breaking, and the juice muſky. This ripens in the beginning of September.

22. Poire du Puchet. The fleſh of this Pear is ſoft and tender, and the juice ſugary. It ripens in the beginning of September.

23. The Perfumed Pear, is of a deep red colour ſpotted with brown; the fleſh is melting, but dry, and has a perfumed flavour. It ripens in the beginning of September.

24. The Salviati Pear. This Pear is red and yellow next the ſun, but whitiſh on the other ſide; the fleſh is tender, and the juice ſugary and perfumed. It ripens about the middle of September.

25. The Roſe-water Pear. The ſkin of this Pear is rough, and of a brown colour, the juice is very ſweet, and taſtes like roſe-water. It ripens in the latter end of September.

26. The Ruſſelet Pear. The fleſh of this Pear is ſoft and tender, and the juice is agreeably perfumed. It ripens in the latter end of September.

27. The Great Mouthwater Pear. The fleſh of this Pear is melting and full of juice. It ripens about the latter end of September.

28. The Prince's Pear, has a highly-flavoured juice. It is a great bearer, and ripens about the latter end of September.

29. The Summer Bergamot. This is ſometimes called Hamden's Bergamot. The fleſh is melting, and the juice highly perfumed. It ripens about the latter end of September.

30. The Autumn Bergamot, is ſmaller than the former; the fleſh is melting, and the juice highly perfumed. It is a great bearer, and ripens in the beginning of October.

31. The Summer Bonchrêtien is very full of juice, which is of a rich perfumed flavour. It ripens about the middle of September.

32. Beurré Rouge (the Red Butter Pear). The fleſh is very melting and full of a rich ſugary juice. It ripens in the beginning of October, and, when firſt gathered from the tree, is one of the very beſt ſort of Pears that we have.

33. The Dean's Pear. The fleſh of this Pear is melting and full of juice, which is very cold. This is a great bearer, and ripens in the beginning of October.

34. The Swiſs Bergamot, has a melting fleſh and is full of juice. It ripens in the beginning of October.

35. The Long Green Pear. The fleſh is melting and full of juice. It ripens in the lat-

ter end of October. This, by ſome, is reckoned the ſame with the Mouthwater.

36. The White and Grey Monſieur John. Theſe are the ſame; the difference of their colour proceeding from the different ſoils and ſituations wherein they grow, or the ſtocks on which they are grafted. If this Pear be rightly managed, there are not many ſorts in the ſame ſeaſon to be compared with it. The fleſh is breaking, and full of a rich ſugared juice. It ripens in the latter end of October or beginning of November.

37. The Flowered Muſcat, is an excellent Pear; the fleſh is very tender, and of a delicate flavour. It ripens in November.

38. The Vine Pear, is of a dark red colour; the fleſh is very melting, and full of a clammy juice. It comes into eating in November.

39. The Rouſſeline Pear, is of a deep-red colour, with ſpots of gray; the fleſh is very tender and delicate, and the juice very ſweet, with an agreeable perfume. It ripens about the latter end of October, but will not keep.

40. The Knave's Pear. The fleſh of this Pear is fine and tender, and the juice very much ſugared. It ripens in the latter end of October.

41. The Marquiſs Pear. If this Pear do not change yellow in ripening, it is ſeldom good; but if it does, the fleſh will be tender and delicate, very full of juice, which is ſugared. It comes into eating in November.

42. The Craſane Pear. The fleſh of this Pear is extremely tender and buttery, and full of a rich ſugared juice. It is the very beſt Pear of the ſeaſon, and comes into eating about the latter end of December.

43. The Lanſac, or Dauphine Pear. The fleſh of this Pear is yellow, tender, and melting; the juice is ſugared and a little perfumed. It is in eating the beginning of December.

44. The Martin Sec (the Dry Martin) is almoſt like the Ruſſelet in ſhape and colour; the fleſh is breaking and fine; and the juice is ſugared, with a little perfume. It is in eating about the beginning of December.

45. The Amadot is rather dry, but high-flavoured. It is in eating about the middle of December.

46. The Little Lard Pear is extremely fine; the fleſh melting; the juice is much ſugared, and has an agreeable muſky flavour. It is in eating the latter end of December, and is eſteemed one of the beſt fruits in that ſeaſon.

47. Louiſbonne (the Good Lewis Pear). The fleſh of this Pear is extremely tender, and full of a very ſweet juice. It is in eating about the middle of December.

48. The Colmar Pear, is very tender, and the juice greatly ſugared. It is in eating about the beginning of January, and is eſteemed an excellent fruit.

49. L' Eſchaſſerie *. The fleſh of this Pear is melting and buttery; the juice is ſugary, with a little perfume. It is in eating about the firſt of January.

50. The Virgouleuſe Pear, is eſteemed by ſome as one of the beſt fruits of the ſeaſon †; the fleſh is melting, and full of a rich juice. It is in eating about the firſt of January.

51. The Ambrette, is eſteemed a very good Pear; the fleſh is quite melting, and full of ſweet perfumed juice. It comes into eating about the beginning of January.

52. Epine d' Hyver (the Winter Thorn Pear) has a very tender buttery pulp, of an agreeable taſte, with a ſweet juice highly perfumed. It is in eating about the latter end of December.

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* This Pear bears beſt on Standards.

† In dry and cold ſeaſons this Pear is very apt to crack, which greatly diminiſhes its value.

53. The St. Germain Pear *, is a fine fruit and keeps long; the fleſh is melting, and very full of juice, which in a dry ſeaſon, or if planted on a warm dry ſoil, is very ſweet. This is in eating from December till February.

54. St. Auſtin. This Pear is pretty full of juice, which is often a little ſharp; the fleſh is tender, but not buttery. It is in eating in the latter end of December, and will continue good two months.

55. The Spaniſh Bonchrêtien, is a large fine Pear; the fleſh is breaking, and the juice ſweet. It is in eating in January.

56. The Wilding of Caſſoy †, called alſo the Small Winter Butter Pear, is a ſmall fruit; the fleſh is melting, and the juice very rich.

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* This Pear, owing to the hot and dry Summer (1801) has come into eating ſix weeks ſooner this ſeaſon than I ever remember; and, of courſe, will be ſo much ſooner out than uſual.

This is an excellent bearer, when planted as a dwarf Standard, and comes in ſucceſſion after the ſame ſort of Pears on wall-trees are over.

It is to be obſerved, that, in dry ſeaſons, fruit ſhould not be ſuffered to ſweat ſo long in the heaps as directed in the Chapter ON GATHERING AND LAYING-UP FRUIT; perhaps a fortnight will be long enough.

† This is an excellent bearer on ſtandards, ſome of which I have lately grafted, and they are now in full bearing.

It is in eating in January. This is an extraordinary good bearer. There was a tree of this kind at Campden Houſe, near Kenſington, which generally produced a great quantity of fruit.

57. The Martin Sire, or the Lord Martin Pear, is a good fruit; the fleſh is breaking and full of juice, which is very ſweet and a little perfumed. It is in eating in January.

58. The Winter Ruſſelet. The fleſh of this Pear is buttery and melting, and generally full of a ſweet juice. It is in eating in the latter end of January.

59. Franc-real, or the Golden end of Winter, is only eſteemed for baking.

60. The Brown Beurré. This Pear is of a reddiſh-brown colour on the ſide next the ſun, and yellowiſh on the other ſide. The fleſh is melting, and full of a rich juice. It ripens in October, and is juſtly eſteemed an excellent Pear.

61. The Holland Bergamot, Amoſelle, or Lord Cheney's, is a very good Pear; the fleſh is half buttery and tender, and the juice is highly flavoured. It will keep from the end of January till April.

62. The German Muſcat, is an excellent Pear; it is buttery and tender, and the juice is

highly flavoured. It is in eating from February till April or May.

63. The Pear of Naples, or Eaſter St. Germain, is half breaking; the juice is ſweet, and a little vinous. It is in eating in March.

64. The Winter Bonchrêtien Pear, is very large; the fleſh is tender and breaking, and is very full of a rich ſugared juice. This is in eating from the end of March till June.

65. La Paſtorelle, is tender and buttery, and the juice ſweet. This is in eating in March.

66. St. Martial, or the Angelic Pear. The fleſh of this is tender and buttery, and the juice is very ſweet. This is in eating in March.

67. The Wilding of Chaumontelle, is melting, the juice is very rich, and a little perfumed. It is in eating in January.

68. The Brown St. Germain, is a very fine high-flavoured Pear on Dwarfs and Standards, and comes in after the Wall St. Germain. It continues in eating from December to the end of March.

69. Pear D'Auch, was introduced by the late Duke of Northumberland. It much reſembles the Colmar, but is fuller towards the ſtalk. It is in eating from Chriſtmas to April, and is, without exception, the beſt of all the Winter Pears.

70. The Swan's Egg, is a middle-ſized Pear, in ſhape like an egg; it is of a green colour, thinly covered with brown; the fleſh is melting, and full of a pleaſant muſky juice. It comes in eating in November. The tree is healthy and bears well, either as a ſtandard or any other way.

71. The Bergamot de Paſque, goes alſo by the following names, viz. the Terling, the Amoſelle, the Paddington, and the Tarquin. This is a fine handſome fruit, green when gathered, and of a yellowiſh or ſtraw colour when ripe. It comes into eating about the month of April, continues till June, and makes a very handſome appearance at table *.

72. The Golden Beurré, is a very fine Pear; it is of a beautiful ſcarlet colour next the ſun, and of a gold colour on the other ſide. The fleſh is melting, and the juice high flavoured. It ripens in October. This tree ſucceeds beſt on an Eaſt aſpect, and a loamy ſoil. It is a plentiful bearer †.

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* This Pear has come into eating above ſix weeks ſooner this ſeaſon (1801) than in any other in my memory.

† This Pear was introduced from Burgundy by the late Marſhal Conway, and was firſt raiſed, in this country, at his ſeat of Park Place, near Henley upon Thames, now the ſeat of Lord Malmeſbury. The above deſcription was tranſmitted to me by Mr. Copland, his Lordſhip's Gardener.

73. A Seedling Pear (from Williams's Nurſery at Turnham-Green), originally from Hampſhire. It reſembles a Summer Bonchrêtien, but is more juicy; is a great bearer, and ripens in September. This Pear will be a valuable acquiſition to the market-gardeners, as it immediately ſucceeds the Windſor Pear.

74. Citron de Carmes, is a middle-ſized Pear, of a yellowiſh-green caſt, full at the eye; of a round ſhape, but tapering a little toward the ſtalk, which is long. It ripens in July.

75. The true Golden Beurré Pear. This in ſhape and ſize reſembles the Brown Beurré; but is of a reddiſh-brown colour next the ſun. A very fine Pear; but will not keep long. It comes into eating in October.

A Selection of Pears, from the Catalogue of Messrs. Anderson, Leslie, and Co. Nurserymen, Edinburgh.

SUMMER PEARS.

Pear James; ſoon ripe, ſoon rotten; has a little flavour, and is the earlieſt Pear that we have in Scotland.

Early Carnock; indifferent, of a yellow colour, and bright red towards the ſun; makes a beautiful ſtandard.

Lemon, Lady's Lemon, or Lady Lamont; indifferently good; principally valued for coming early, and being a good bearer.

Green Pear of Pinkey; a ſmall green Pear, nearly round, of a ſweetiſh taſte.

Forrow Cow, a Clydeſdale Pear; a large Pear with a ſhort ſtalk; flat towards the eye; its colour red and yellow; its fleſh tender and muſked.

Pear Sauch, a Clydeſdale Pear, a big-bellied beautiful Pear; the tree large, a great bearer, and fit for an orchard; the Pear but indifferent.

Gray Honey, pretty good.

Green Orange Pear, or Orange Vert; a very good Pear.

Brute Bone, Chaw Good, or the Pope's Pear; indifferent.

Golden Knap, ſuppoſed Scotch, is a ſmall Summer Pear, of tolerably good qualities.

Early Achan, an indifferent fruit; greatly inferior to the Winter Pear of that name.

Hanging Leaf; this is its name in Clydeſdale; good and beautiful; almoſt round; its colour red and yellow: a delicious ſweetneſs is found in its taſte.

Scots Bergamot, a large good Pear, of a yellow and red colour; its fleſh tender and juicy.

Longueville; very good, but a precarious bearer; ſuppoſed French, but not in their catalogues by that name.

Muſked Bonchrêtien, Gratioli, Cucumber, or Spinola's Pear; a very good Pear, if grafted on a free ſtock; its pulp is ſomewhat between ſhort and tender, with a great deal of perfumed juice; its colour red on one ſide, and white on the other.

Saffron Pear; a pretty large well-ſhaped Pear, fit for an orchard.

AUTUMN PEARS.

Keather, a Clydeſdale Pear, of middling ſize, and oblong ſhape, its juice agreeable.

French Carnock; tolerably good.

Elſhin Haft, or Good-Man Pear; a long Pear, flat towards the eye; its colour green and yellow; its fleſh hard, dry, and ſweet.

Drummond, or Late Scotch Carnock; very good, if eaten before it grows mealy; its colour a bright red and yellow.

Vicar, an oblong Pear; its colour yellow, red and ſtriped; tender, ſweet, and muſked, but dry.

Royal Orange Bergamot; this differs from the Orange Bergamot in being yellower, and ſometimes having a faint red on one ſide.

Green Pear of Yair; ſweet, juicy, and melting; of a moderate ſize; takes its name from Yair, on Tweed-ſide, where it was firſt diſcovered.

Rob Hind; very indifferent.

Le Beſideri, the Wilding of the foreſt of Ileri in Bretagne; a yellowiſh Pear, of middle ſize; indifferent.

Unicorn Pear; of a beautiful red and yellow colour; but rather auſtere in taſte.

WINTER PEARS.

Winter Achan, a Scotch Pear; among the beſt early Winter Pears, and equal to moſt of thoſe of French origin.

Brier Buſh, Scotch; a good pear, and will ripen in moſt ſeaſons; it is a ſmall Pear, of a firm ſubſtance and ſweet taſte.

Brompton Park; a ſeedling ſent by Jefferys of that name.

Round Winter, a Clydeſdale Pear; a very excellent Winter Pear, as deſcribed in Dr. Gibſon's Fruit Gardener.

Poir Portrail, or Gate Pear; for baking.

La Double Fleur, or the Double Flowering Pear; a large flat beautiful Pear, with a ſmooth ſkin, and bluſh colour on one ſide, and yellow on the other; the beſt Pear to preſerve, taking a beautiful red colour from the fire.

*In the following additional List those marked * are best for baking or stewing, and those † for making of Perry.*

Ambroſia Pear.
Aſhton Town.
Autumn Muſk Bonchrêtien.
Biſhop's Thumb.
*Bloody Pear.
Brocas Bergamot.
†Barland.
*Beſideri.
Beaurré de Roi.
*Black Pear of Worceſter.
Britannia.
Burdelieu.
Doyenne, or St. Michael.
*Catillac.
Eaſter St. Germain.
Ganſel's Bergamot.
Golden Beurré.
Gray Beurré.
Gray Goodwife.
Green Sugar.
Green Bergamot.
Huntingdon Pear.
†Huffcap.
King's Catharine.
Lammas.
London Sugar.
Muſcat Almain.
Muſk Blanquet.
†Oldfield.
Orange Bergamot.
Pear Piper.
Pyrus Pollveria.
Red Admirable.
†Rough Cap.
Scotch Bergamot.

Seven Angled.
Silver Striped.
*Spaniſh Red Warden.
†Squaſh.
Striped Verte Longe.
White Beurré.

To those who have small Gardens, and room only fo a few Trees, I would recommend the following as the most useful, viz.

Summer Pears. The Muſk Pear; the Green Chiſſel; Jargonelle; Summer Bergamot; Summer Bonchrêtien.

Autumn Pears. The Orange Bergamot; Autumn Bergamot; Ganſel's Bergamot; Brown Beurré; Doyenne, or St. Michael: and Swan's Egg.

Winter Pears. Craſane; Chaumontelle; St. Germain; Colmar; D'Auch; L'Eſchaſſerie; Winter Bonchrêtien; and Bergamot de Paſque.

The above will furniſh a regular ſucceſſion of fruit.

Of the Management of Pear-Trees.

It will be unneceſſary to ſay much here on the choice of young Pear-trees; as the rules already laid down are ſufficient for that purpoſe.

I would adviſe thoſe who intend to plant Pear-trees, inſtead of chooſing young ones, to look out for the oldeſt that they can find in the

Nurſery, and with ſtrong ſtems; to have them carefully taken up, with as much of the roots as poſſible, and carefully planted, after cutting in the roots a little, ſpreading them as horizontally as you can. Then fill up all round the roots with light dry mould; forcing it in, about thoſe which lie hollow, with a ſharp pointed ſtick; filling the whole up to the top without treading the mould, till you have firſt filled the hole with as much water as it will contain, leaving it a day or two until the ground has abſorbed the water; then throw on ſome freſh dry mould, and tread it as hard as you can; fill the hole up again with mould to within an inch of the top, and give it a ſecond watering, leaving the mould about three inches higher than the border, to ſettle of itſelf, and to receive the rain that falls, for at leaſt a month. When the mould has become quite dry, you may tread it a ſecond time; then make a large baſon all round the tree, and give it another watering; then mulch the top over with ſome rotten leaves or dung, obſerving to water the trees once a week in dry weather, and ſprinkle the tops frequently with a pot, or hand engine, to keep the wood from ſhriveling till the trees have taken freſh root.

When you plant trees againſt a wall, remember to let the ſtem ſtand ſloping towards it; the lower part of it ſhould be ſix inches from the bottom of the wall, to give the ſtem room to grow. If planted cloſe to the wall at bottom, the ſtem, in growing, will be confined on the back, and will grow flat, and be very unſightly. If any roots are in the way, to hinder it from being planted near enough to the wall, they muſt be cut off: at the ſame time take care that the tree does not lean to either ſide, but that, when viewed in front, it may appear perfectly upright. You will ſometimes ſee ſtandards and half ſtandards planted a foot or two from the wall, which gives them a very diſagreeable appearance; ſix inches will be quite ſufficient. Take care not to wound the ſtem or root of the tree in planting.

If the young trees have two ſtems, always remember to cut off one of them, leaving the ſtouteſt and ſtraighteſt; obſerving to plant that ſide outwards which has moſt buds on it.

When the buds begin to break well, you may head the trees to three or four eyes, to fill the wall with fine wood. You muſt never head them afterward, except the leading ſhoot to fill the wall, obſerving to leave the foreright ſhoots to be pruned, as hereafter directed. I have had ſome trees that had forty Pears on them the ſecond year; while ſome of the ſame kind bore only eleven Pears the fourteenth year after planting, with the common method of pruning.

If you cannot get ſuch old trees as recommended above, get the ſtouteſt and cleaneſt of the one year's old after grafting.

If any of theſe trees get ſtunted after a number of years, you have nothing more to do than to head them as hereafter directed, which will bring them into freſh vigour and fruitfulneſs.

The method of pruning Pear-trees is very different from that practiſed for Apple-trees in general. The conſtant practice has been, to leave great ſpurs, as big as a man's arm, ſtanding out from the walls, from one foot to eighteen inches and upwards. [*See* PLATE VII. *Letter* C.] The conſtant pruning inevitably brings on the canker; and, by the ſpurs ſtanding out ſo far from the wall, the bloſſom and fruit are liable to be much injured by the froſt and blighting winds, and thus the ſap will not have a free circulation all over the tree. The ſap will always find its way firſt to the extremities of the ſhoots; and the ſpurs will only receive in a ſmall proportion, as it returns from the ends of the branches. The fruit ſtanding at ſo great a diſtance from the wall is too much expoſed to the weather, and, of courſe, is liable to be hard, ſpotted, and kernelly; as *Letter* D. PLATE VII.

I have adopted the following method when the trees were all over cankered, and the fruit ſmall, and not fit to be ſent to the table. I cut the tops off as near as poſſible to where they were grafted; always obſerving to cut as cloſe to a joint or bud as poſſible. The buds are hardly perceptible; but you can always know where the joints, or forks, are, by the branches breaking out of the ſides.

Finding the Pear-trees in Kenſington Gardens in a very cankery and unfruitful ſtate, in the years 1784 and 5, I took out the old mould from the borders againſt the walls, and put in freſh loam in its ſtead; at the ſame time I pruned and nailed the trees in the common way, and left them it that ſtate upwards of eighteen months, to ſee what effect the freſh mould would have on them; but, to my great ſurprize, I found that it had no good effect.

After I had tried the freſh mould as above, I began to conſider what was beſt to be done with ſo many old Pear-trees that were worn out. The fruit that they produced I could not ſend to his Majeſty's table with any credit to myſelf, it being ſmall, hard, and kernelly. I thought it would be a great reflection on me as a profeſſional man, that after I had put his Majeſty to ſo great an expence, no advantage was likely to be derived from it. I ſaw that ſome method muſt be tried to reſtore theſe old trees, or that next year they muſt be grubbed up, and was loth to give them entirely up before I had tried ſome experiments. I conſidered, that it muſt be between twelve and fourteen years before I could have any fruit from young trees; and therefore determined to try an experiment, with a view to recovering the old ones.

I began with cutting down four old and decayed Pear-trees of different kinds, near to the place where they had been grafted: this operation was performed on the 15th of May 1786. Finding that they put forth fine ſhoots, I headed down four more on the 20th of June in the ſame year (for by this time the former had ſhoots of a foot long), which did equally well, and bore ſome fruit in the following year. One of the firſt four that I headed down was a St. Germain, which produced nineteen fine large well-flavoured Pears next year, [*See Letter* B. PLATE VII.] and in the third bore more fruit than it did in its former ſtate when it was four times the ſize.

I left ſeven trees upon an Eaſt wall, treated according to the common method of pruning, which bore the following number of Pears upon each tree:

Epine d'Hyver produced eighty-ſix Pears, and the tree ſpread fifteen yards.

A Craſane produced one hundred Pears, and the tree ſpread fourteen yards.

Another Craſane produced ſixteen Pears, and the tree ſpread ten yards.

A Virgouleuſe produced one hundred and fifty Pears, and the tree ſpread nine yards.

A Colmar produced one hundred and fifty Pears, and the tree ſpread nine yards.

Another Colmar produced ſeventy-nine Pears, and the tree ſpread ten yards.

A L'Eſchafferie produced ſixty Pears.

Seven trees headed down and pruned according to my method, leaving the foreright ſhoots in Summer, bore as follows, in the fourth year after heading.

A Louiſbonne bore four hundred and ſixty-three Pears, and the tree ſpread nine yards.

Another Louiſbonne bore three hundred and ninety-one Pears, and ſpread eight yards.

A Colmar bore two hundred and thirteen Pears, and ſpread ſix yards.

A Brown Beurré bore five hundred and three Pears.

Another Brown Beurré bore five hundred and fifty Pears.

A Craſane bore five hundred and twenty Pears.

A Virgouleuſe bore five hundred and eighty Pears.

The branches of the four laſt trees ſpread nearly in the ſame proportion as the firſt three.

A young Beurré, the ſecond year after heading, bore two hundred and thirty Pears; and a St. Germain four hundred.

All the above trees ſtood upon the ſame aſpect and the ſame wall, and the fruit was numbered in the ſame year. A great many Pears which dropped from the trees are not reckoned. The trees that were pruned according to the old practice covered at leaſt one-third more wall than the others.

By the above ſtatement it appears, that the trees headed down bore upwards of five times the quantity of fruit that the others did; and it keeps increaſing in proportion to the progreſs of the trees.

On the 20th of June I headed ſeveral Standards that were almoſt deſtroyed by the canker; ſome of them were ſo loaded with fruit the following year, that I was obliged to prop the branches, to prevent their being broken down by the weight of it. In the fourth year after theſe Standards were headed down, one of them bore two thouſand eight hundred and forty Pears. There were three Standards on the ſame border with the above, two of which were St. Germains; the old tree was of the ſame kind. One of theſe trees *, twenty years old, had five hundred Pears on it, which was a great crop for its ſize: ſo that there were on the old tree, which had been headed down not quite four years, two thouſand three hundred and forty Pears more than on the tree of twenty years growth.

When the men numbered the Pears, there was near a barrowful of wind-falls at the bottom of the old tree, which were not included.

Plate VIII. is a correct Drawing of an old decayed Beurré Pear-tree, reſtored from an inch and a half of bark, which now covers a wall ſixteen feet high. In the year 1796, it bore

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* This tree was about ſix years old when I planted it fourteen years ago.

four hundred and fifty fine large Pears, and has continued in a flouriſhing ſtate ever ſince. The letters *a*, *a*, *a*, repreſent the fruit buds for the preſent year; *b*, *b*, *b*, are thoſe forming for next year; and *c*, *c*, *c*, the old footſtalks that bore the fruit laſt year: the ſmall buds are beginning to form, which produce fruit the ſecond year; and *d*, *d*, are the foreright ſhoots as they appear before they are cut, which muſt be at *e*, cloſe to a bud, and ſloping towards the wall as much as you can, leaving them as regular as poſſible all over the tree; you will then have a regular crop of fruit from the ſtem to the extremities of the branches: but if this be not obſerved, you will have hardly any fruit next year.

The following is the method which I purſue in training trees that are cut near to the place where they were grafted.

Every year, in the month of March, I ſhorten the leading ſhoot to a foot or eighteen inches, according to its ſtrength; this ſhoot will, if the tree be ſtrong, grow from five to ſeven feet long in one ſeaſon; and, if left to nature, would run up without throwing out ſide-ſhoots. The reaſon for thus ſhortening the leading ſhoot is, to make it throw out ſide-ſhoots; and if it be done cloſe to a bud, it will frequently cover the cut in one ſeaſon, leaving only a cicatrix, as at *f*, *f*, *f*, in PLATE VIII. which ſhew every year's growth and cicatrix. When the ſhoots are very ſtrong, I cut the leading ſhoot twice in one ſeaſon; by this method I get two ſets of ſide-ſhoots in one year, which enable me the ſooner to cover the wall. The firſt cutting is performed any time during the Spring, and the ſecond about the middle of June.

When you prune the trees, and cut the fore-right ſhoots, which ſhould be done in February or March, always cut cloſe to an eye or bud, obſerving where you ſee the greateſt number of leaves at the lower bud, and cut at them; for at the footſtalk of every one of theſe will be produced a flower bud. The ſame will hold good in cutting the ſuperfluous ſhoots on Standard Pears. You will have in ſome ſorts of Pears, in a favourable ſeaſon, from five to nine Pears in a cluſter. This cutting ſhould not be later than March, or the beginning of April, on account of the leading ſhoot beginning to grow; the next topping, when the leading ſhoot grows quick enough to admit of it, ſhould be about the middle of June; and the length of the ſhoots ſhould be according to their ſtrength, having from three eyes, or buds, to fix on a ſide. Plate VIII. will better explain the different years' growth, &c. than I can do by words. The loweſt *f*, is the place where we began to cut the top off; and *g*, the old decayed ſtump, with very little bark left.

The cankery part beginning to affect the new bark, I cut off all the canker at the bottom laſt year, and plaſtered the place with ſome cow-dung mixed with wood-aſhes and powder of burnt bones, put into as much urine and ſoapſuds as would make it of the conſiſtence of thick paint; this I laid on with a painter's bruſh. After it had been applied about three hours, I patted it gently down, with my hand, cloſe to the tree. By ſo doing, I get rid of all the air bubbles that may be under the Compoſition, and make it adhere to the tree, preventing it from being waſhed off by heavy rains.

In the beginning of Auguſt we ſhorten the foreright ſhoots to about four inches long; by this time the ſhoot will have made its full growth for the ſeaſon, and will produce fine ſtrong eyes for the following year.

Such ſhoots as grow near the ſtem of the tree, if any are wanted to fill up the wall, may be tucked-in as directed for Peaches. [*See alſo* Plate VIII.] This will prevent them from looking unſightly, and ſave them from the fury of the Autumnal and Winter winds.

The tree above-mentioned had a decayed rotten root, the dead part of which I cut all away, till I came to the ſound wood. Whenever the trunk is hollow, you muſt follow it under ground till you have cut out all the decayed parts and rotten roots; otherwiſe you will loſe the tree.

By proceeding according to the foregoing directions, the root will be renewed, while the tree is forming a fine handſome head. In the mean-time trench your borders, taking up all the old roots, and add ſome freſh mould to them, if you can conveniently get it; if you cannot, remove all the ſour mould that is about the roots of the trees, and put in ſome taken from the border, at a diſtance from the wall; always remembering to lay the top ſpit next to the roots of the trees; alſo, mix ſome vegetable mould, from the Melon and Cucumber beds, with rotten leaves, as a manure for the borders.

I have headed down many trees that had not this preparation; and yet they throve very well, but did not ſend forth ſuch fine roots and ſhoots as thoſe that were ſo prepared.

If the above directions be followed, you will get more Pears in three or four years than you can in twenty-five years by planting young trees, and pruning and managing them in the common way.

If you ſhould find, that, before the Pears arrive at half their natural ſize, they get ſtunted, after cold blighting winds, and froſty nights (ſuch as we have had for ſeveral years paſt in the months of June and July), I would recommend a new operation to be performed when the weather begins to grow mild.

Take a ſharp penknife, and with the point of it make an inciſion through the rind of the Pear from the footſtalk to the eye, in the ſame way as you would ſcarify a bark-bound tree, taking care to penetrate as little into the fleſh of the Pear as poſſible. At the ſame time beat up ſome freſh cow-dung with wood-aſhes, and with your forefinger rub in a little of this Compoſition where you made the ſcarification; as the wound heals, the Compoſition will be diſcharged from the fruit; this will prevent the Pears from cracking and burſting, which renders them good for nothing. The ſorts that are moſt liable to this diſorder are, the Colmar, Virgouleuſe, and Craſane.

I only

I only recommend this operation for wall Pears. It may be thought by ſome a troubleſome operation. It certainly will take up ſome time; but ſure I am, that no gardener, who wiſhes to have his maſter's table well ſupplied with fine Pears during the Winter, will grumble at loſing a few hours ſleep in a morning, or ſpending an hour or two in an evening after his men have left work. It may, perhaps, prevent him from ſpending his money and loſing his time in a public-houſe, or in ſome trifling amuſement to very little purpoſe. At the ſame time it will afford him ſingular ſatisfaction to find his handywork proſper.

Reſpecting the Diſtance at which Pear-Trees ſhould be planted from each other againſt Walls, and of the Breadth of the Borders.

If Pears are grafted on free Stocks, ſuch as Colmars, Pear D'Auch, Craſanes, L'Eſchaſſeries, Virgouleuſes, and Winter and Summer Bonchrêtiens, they ſhould be planted at leaſt twelve yards diſtant from each other, ſuppoſing the walls to be from twelve to ſixteen feet high; if they are only ten feet, fifteen yards will be little enough.

If Pears are planted on South walls, you may plant Vines, Peaches, Nectarines, or Apricots, between them, till the trees extend ſo far as nearly to meet each other: you may then remove the Peaches, Nectarines, &c. to any other ſituation in the garden where they are wanted. If Pears are planted on Weſt walls, you may plant the ſame ſort of trees between them as on South walls; the fruit on a Weſt aſpect will come into uſe to ſucceed that on the South. On an Eaſt wall, you may plant different ſorts of Plums and Cherries between the Pear-trees till they almoſt meet; then tranſplant the Plums and Cherries as Standards or wall-trees, as you ſee fit.

The borders for Pear-trees in a large garden ſhould not be leſs than from ten to twenty feet wide, with a foot-path about three feet from the wall, covered over at top with coal-aſhes, or road-ſand, to make a dry walk for getting at the trees to cut and nail them, to gather the fruit, &c.

The depth of the mould for Pear-trees ſhould never be leſs than three feet, laying the beſt mould at top, to encourage the roots to come as near the ſurface as poſſible. If the bottom be clay it will be very neceſſary, once in every five or ſix years, to open the ground round the roots of the trees, and cut off all the large ones that are inclining to run into the clay; by ſo doing, your trees will throw out freſh roots that will run near the ſurface, provided the mould is good near the top of the borders.

You may have a crop of early Peas, Lettuce, or Spinach, or any other ſmall crops, on the borders, during the Winter and Spring; but no late crops by any means. If the ground can be ſpared, I would adviſe to have no Summer crops; but keep the borders hoed, in particular after rain: otherwiſe the ground, if a ſtrong loamy or clayey ſoil, will be apt to crack in dry weather; but by frequent ſtirring between wet and dry this will be in a great meaſure prevented, and the Sun's rays admitted into the mould, which will greatly heighten the flavour of the fruit. When you can conveniently ſpare the borders in Winter, they ſhould be ridged up to ſweeten the mould; which you may very well do, if you ſow early Peas on the ſides of the ridges; which is by far the beſt way to preſerve the Peas from the froſt, and to prevent them from rotting, which will ſometimes happen, if the land be ſtrong, before they begin to vegetate. Or, you may ſow an early crop of Carrots or Spinach on the borders.

CHAPTER VIII.

OF VINES.

Different Sorts of Vines cultivated in England—Of their Propagation—Experiments on Training and Pruning, with full Directions for the right Performance of both—Use of the Composition in Pruning—Of Watering—Preserving Grapes from Flies, Wasps, and Birds—Of gathering Grapes, and keeping them in Winter.

THE Vine is a native of moſt of the temperate parts of the world, and has been cultivated ever ſince the flood. It belongs to the firſt order of Linnæus's fifth Claſs, Pentandria Monogynia.

I ſhall here ſelect thoſe Vines which are moſt eſteemed in this country, for the Hothouſe, Vinery, and the Natural Wall; and give a ſhort deſcription of each.

N. B. The letter (h) *distinguishes the proper sorts for a Hothouse; the letter* (v) *for a Vinery; and the letter* (w) *for a Common Wall.*

1. The July Grape, or Morillon Noir Hatif, is a ſmall round black berry of a ſugary juice; and is principally eſteemed for being early ripe, which is in September. *v. w.*

2. The Royal Muſcadine, D'Arboyce, or Chaſſelas Blanc, is an excellent Grape; the bunches are large, and compoſed of round amber-coloured berries of a rich vinous taſte. In a a fine ſeaſon it ripens in September. *h. v.*

3. The Malmſey Muſcadine ſomewhat reſembles the preceding; the juice is very ſweet and of a high flavour. This is a good bearer and a very fine Grape. *w. v.*

4. The Black Muſcadine. This is a good bearer, and the berries are beautifully powdered th a bluiſh bloom. *h. v.*

5. The White, or Common Muſcadine, by ſome called the Chaſſelas. This reſembles the Royal Muſcadine, but the berries are ſmaller; and, although it is not ſo ſweet as the Royal, it is the beſt Grape that we have for a common wall, and a great bearer. *w.*

6. The White Muſcat of Alexandria, or Alexandrian Frontinac. The berries are oval, and the bunches long. This Grape has a rich vinous juice, and is eſteemed an exceeding good Grape for the Hothouſe. *h.*

7. The Red Muſcat of Alexandria reſembles the former; only the berries are red. *h.*

8. The White Muſcat, from Lunel. This Grape has large oval berries, of an amber-colour, and full of a vinous juice. This Vine is a plentiful bearer, and highly eſteemed. *h. v.*

9. The Black Muſcadel, has large oval berries of a black colour and pleaſant juice. *h.*

10. The Red Muſcadel, has large red berries of an oval ſhape, and ripens late. The bunches are very large. *h.*

11. The Black Damaſcus, has large, round, black coloured berries; the fleſh is rich and well flavoured. This is an excellent late Grape. *h.*

12. The Black Grape from Tripoli, has large black berries, and is an excellent Grape. *h.*

13. The Black Spaniſh, or Alicant Grape. This Grape has black berries of a pleaſant flavour. *h. v.*

14. The Black Grape from Liſbon. This Grape has large round juicy berries, and the bunches reſemble the Black Hamburg. This is a good Grape. *h. v.*

15. The Black Frontinac, or Muſcat Noir. This Grape has pretty large round berries, black when ripe, and covered with a mealy

powder. It has a rich vinous juice, and ripens in October. *h. v.*

16. The Red Frontinac, or Muſcat Rouge, is a very fine Grape, and greatly eſteemed: it has large brick-coloured berries, and the juice is of a highly vinous flavour. *v.*

17. The White Frontinac, or Muſcat Blanc, has large bunches compoſed of round berries. The juice of this Grape, when fully ripe, is exquiſite. *h. v. w.*

18. Grizzly Frontinac, has round berries, of a colour compoſed of brown, red, and yellow. This Grape has an excellent flavour. *h. v.*

19. The White Sweet Water. The berry is large, of a white colour, and very agreeable juice. This is eſteemed an excellent Grape, and ripens in September. *h. v. w.*

20. The Black Sweet Water, has a ſmall roundiſh berry of a ſweet taſte; but, being apt to crack, is not in much repute. The birds are very fond of this Grape, which ripens in September. *v. w.*

21. The Black Hamburgh. The bunches of this Grape are large, compoſed of large oval black berries, of a pleaſant ſweet juice and vinous flavour. It ripens in November. *h. v.*

22. The Red Hamburgh, has thin-ſkinned berries of a dark red. They have a rich vinous

flavour, and ripen about the ſame time with the former. *h. v.*

23. The White Hamburgh. This Grape has large oval-ſhaped berries, and is a pretty good bearer. *h.*

24. The Small Black Cluſter, has ſmall oval berries. The leaves are covered with a hoary down. This is a very pleaſant fruit. *v. w.*

25. The Large Black Cluſter, is larger than the former, and has a very rough harſh taſte. Mr. Speechly ſays, that he had this Grape from Liſbon, and was aſſured that it is the Grape of which they make Red Port Wine. I have had the ſame Grape eight or ten years. *v.*

26. The White Grape from Alcobaca. This Grape bears large bunches of white juicy berries. *v.*

27. The White Morillon, has an oval-ſhaped juicy berry. The leaves are downy on the under ſide. *h. v.*

28. Early White Grape, from Teneriffe. The berries are of a middling ſize, and the fleſh remarkably ſweet and juicy. *v. w.*

29. The White Parſley-leaved Grape, or Ciotat. This Grape has round berries, white, juicy, and ſweet. There is a ſort of the Parſley-leaved Grape with red fruit. *v.*

30. The White Corinth Grape, has a ſmall round berry, with a fine juicy fleſh of an agreeable flavour.

31. The Aleppo Grape, has middle-ſized berries, with a juicy fleſh of a very fine flavour. This is a curious Grape, frequently ſtriped black and white. *h. v.*

32. The Red Grape, from Syracuſe. This is a very fine large Grape. *h.*

33. Le Cœur Grape, or Morocco Grape. This Grape has berries of a tawny colour, and is highly eſteemed. *h.*

34. The Golden Galician Grape, has large oval berries, of a yellow colour, and tolerable flavour. *h.*

35. The Black Raiſin Grape. This ſpecies has large black berries of an oval form. The ſkin is thick, and the fleſh firm. *h.*

36. The White Raiſin Grape reſembles the preceding; only that the berries are white. *h.*

37. The Malvoiſe, ſometimes called the Blue Tokay, has ſmall browniſh berries, powdered with a blue bloom. The juice is vinous. *h. v.*

38. The Genuine Tokay, is a white Grape, with a thin ſkin, delicate fleſh, and agreeable juice. *h. v.*

39. The Lombardy Grape, has fine, large, flame-coloured berries, full of a fine juice; and

the bunches grow to a great ſize, frequently weighing more than ſix pounds. *h. v.*

40. The Smyrna Grape. This has a large red berry, of a very fine flavour, and is eſteemed a very good Grape. *h. v.*

41. The Brick Grape, ſo called from its colour, has ſmall berries, but the juice is ſweet. *v. w.*

42. The Claret Grape, has ſmall black berries, with a blood-red juice; but the Grape is very harſh, if not perfectly ripe. *h. v.*

43. The Syrian Grape. This has large, white, oval berries, with a thick ſkin and hard fleſh. It is a good bearer. *h.*

44. The Auverna, or true Burgundy Grape, ſometimes called the Black Morillon, is an indifferent fruit for the table; but is eſteemed one of the beſt for making wine. *v. w.*

45. Cat's Grape. This Grape has ſmall berries, of a pale green colour. The fleſh is ſoft and juicy, but of a very diſagreeable taſte, unleſs quite ripe. *h. v.*

46. The Damſon Grape, has very large berries, of a purple colour. *h.*

47. St. Peter's Grape, has a large oval berry, of a deep black colour when ripe; the bunches are large, and the fleſh juicy; it ripens late. *v.*

48. The Greek Grape. The berries are of a bluiſh white colour; and it is eſteemed a fine Grape. *h. v.*

49. The Black Corinth, or Currant, Grape, is a ſmall roundiſh berry, generally without a ſtone, of a deep black colour. It has a ſweet juice, and ripens in October. *h. v.*

50. The Cornichon Grape, has berries of a remarkable ſhape, long and narrow, of a white colour, with a firm ſweet fleſh. *h.*

51. The Red Chaſſelas, is very like the Chaſſelas Blanc in ſize and ſhape; but is of a dark red colour. It is a very good Grape, but ripens later than the white.

52. The New Muſcat of Jeruſalem, was introduced by Mr. Philip Miller, a Vine of which is now in the Botanic Gardens at Chelſea. It has large round berries of a red colour; ſome of which I have, in fine ſeaſons, ſeen as large as a gooſeberry; but, as it does not ripen well on the natural wall in this country, it might be worth while to try it in a hothouſe, or vinery. It was introduced here about thirty-ſix years ago. *h. v.*

53. The Black Prince. This has fine large berries, and the bunches grow to a large ſize: I have had them, in a favourable ſeaſon, on the natural wall, weigh a pound and a half.

This Grape very well deſerves a place in the hothouſe and vinery. It ripens on the natural wall * in October. Laſt ſeaſon (1801), I left ſome of them on the Vines till the middle of November.

To the foregoing may be added:

Black Frankindale.
Black Gibraltar.
Black Muſcat of Alexandria.
The Miller Grape.
New White Sweet Water.
Paſſe Muſk.
Pearl Muſcadine.
Red Conſtantia.
Red Raiſin.
Sir Abraham Pitcher's Fine Black.
Weſt's St. Peter.
White Conſtantia.

From the Red and White Conſtantia is made the famous Conſtantia Wine, ſo called from a place near the Cape of Good Hope.

My worthy friend, Colonel Paterſon †, in-forms me, that this Vine, when tranſplanted to but a ſmall diſtance from that ſpot, produces a very inferior wine. In his Narrative he ſays, "Conſtantia produces excellent wine, though the ſituation is rather low. It is, however, preferable to all other parts of this diſtrict; not only becauſe it is rather more elevated; but on account of the nature of the ſoil, which is a light ſandy loam."

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* The time of ripening refers to thoſe on the natural wall; as on hot walls and in houſes it depends on the time when you begin forcing.

† This gentleman is well known in the Literary World, by his Narrative of Four Journeys into the Country of the Hottentots, and Caffraria; from whence he ſent a great many new Plants and Seeds to England. He alſo brought home with him ſome curious ſkins; and good drawings of many plants, animals, &c.

Select Vines for a Small Garden.

The White Muſcadine; White Sweet Water; Black Sweet Water; Large Black Cluſter; Small Black Cluſter; The Miller Grape.

St. Peter's, and the Black Hamburgh, will do very well in favourable ſeaſons.

Of the Propagation of Vines.

The Vine is propagated by ſeeds, cuttings, and layers; and by grafting and inoculation.

When Vines are to be raiſed from ſeed, it ſhould be ſown about the latter end of February, or the beginning of March, in pots filled with light freſh mould, and plunged in a moderately warm hot-bed, gently ſprinkling the mould from a watering-pot having a fine roſe. About ſix or eight ſeeds, if good, will be ſufficient for a pot * of forty or ſixty to a caſt; for, if ſown too thick, the plants are apt to be drawn, and thereby become very weak. In dry weather the pots ſhould be watered gently every day: but in wet or moiſt weather this may frequently be omitted, giving them ſo much only as will keep the mould moiſt till the plants begin to vegetate. The proper time for watering is in the afternoon, when the ſun is going off the frame. Obſerve to ſhut the frame down immediately after watering; and if the heat be not too great, it may remain ſhut during the night. As the heat of the bed begins to

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* In the vicinity of London, Pots are denominated by the number contained in what the Potters call a Caſt.

They are delivered in at the price of from two ſhillings and four pence to half a crown per Caſt, which contains as under, viz.

The 1ſt ſize of	8	in the Caſt is	called Eights.
2	12	do.	Twelves.
3	16	do.	Sixteens.
4	24	do.	Twenty-fours.
5	32	do.	Thirty-two's.
6	48	do.	Forty-eights.
7	60	do.	Sixtys.

Pans for forced Strawberries, French-beans, &c. are alſo ſold by the Caſt, and at the above price.

Pots larger than eights are generally made to order, and paid for according to their ſize.

There are ſome ſmaller than ſixtys, for ſeedlings and heaths.

decay, you muſt add a lining of horſe-dung and freſh leaves; which, when occaſion requires, may be ſhaken up and repaired by adding ſome freſh leaves and dung to it, and thus keep up a proper warmth till the plants have got ſufficient ſtrength to do without any bottom heat.

About the latter end of Auguſt it will be neceſſary to take the lights off, that the plants may be hardened before winter, taking care to ſhelter them in frames covered with mats, which will prevent the froſt in the latter end of October and beginning of November from injuring the tender ſhoots.

When the plants are about ſix inches high, they ſhould be tranſplanted ſingly into deep forty-eights, filled with the ſame ſort of vegetable mould as is directed to be uſed for Vines; taking great care not to hurt the roots, nor to break the leaders; then plunge them again into the hot-bed: but if the heat of the old bed be too much decayed, it will be neceſſary to have a new one prepared before-hand to receive the pots as ſoon as the plants are tranſplanted. If they grow vigorouſly, it will be neceſſary to ſhift them into thirty-two's.

When the plants are above ſix inches high, they ſhould be carefully tied to ſmall rods, leaving only one ſtem for the firſt year. The rods ſhould be as high as the frames will permit.

When the leaves begin to drop, they ſhould be carefully picked off the pots, to prevent the plants from getting mouldy, which would very much injure them.

The plants ſhould be kept under frames, or put into the green-houſe, in hard Winters, to ſhelter them from ſevere froſts. In the Spring, about March or the beginning of April, if from ſeed ripened in this country, they may be planted out againſt the walls where they are to remain; but, if from ſeed imported from Vine countries, I would adviſe not to plant above one or two againſt the wall, or in the hot-houſe, before you have obtained a ſpecimen of the fruit, and be ſatisfied that they are worth cultivating.

After they are planted, they ſhould be cut at the third eye, if ſtrong; but at the ſecond, if weakly: at the ſame time remember to rub off the lower bud with your finger and thumb, as hereafter directed.

If Vines are to be propagated from cuttings, they ſhould be choſen from the ſhoots that are beſt ripened, and have the ſhorteſt joints; always having one or two joints of the laſt year's wood, cutting it perfectly ſmooth and a little rounding at the lower end, and as near to a joint of the old wood as poſſible. The upper end ſhould alſo be cut ſmooth and ſloping towards the wall; but if they are planted in beds or borders, let the cut always face towards the North. When cuttings are planted againſt piers or walls, let it be at about a foot diſtant from each other, according to the vacant ſpace, and ſo deep as to have the ſecond eye level with the ground; remembering always to rub off the lower eye. By ſo doing, if no accident happens to the top bud, there will be a ſhoot produced from each eye, with a little one under, which ſhould always be rubbed off as ſoon as it begins to ſwell; for if ſuffered to grow to any conſiderable ſize, you will be in danger of injuring the large one in rubbing the ſmall one off, Remember alſo to pick off all the runners and ſide-ſhoots, as before directed, leaving only two ſhoots, which ſhould be trained at their full length. About January or February they may be pruned, leaving one or two eyes on each according to the ſtrength of the ſhoot, which ſhould be managed as ſhall be more fully explained hereafter.

In the firſt year, eſpecially if the Summer be dry, and proper attention be not paid to the watering of them, they will make but little progreſs; but in the ſecond year you will plainly diſcern which is the ſtrongeſt plant, which only ſhould be left to fill up the vacant ſpace on the wall: the reſt ſhould be taken up and planted in other ſituations where they are wanted.

Mr. Speechly and others practiſe a method of propagating the Vine from one eye, and a few inches of the preceding year's wood, which he prefers to thoſe raiſed by cuttings in the common way, for the following reaſons: "They have more abundant roots, grow ſhorter jointed, are more prolific, and will, if permitted, come into bearing the ſecond year."

You ſhould make choice of the cuttings after a warm dry ſeaſon, ſuch as laſt year (1800); but not after ſuch as the year before, when the wood did not ripen properly, owing to the wet and cold ſeaſon. Each cutting ſhould have two inches of the old wood, with one eye of the new. When you prune your Vines you will have great choice; you ſhould then ſelect your cuttings of a middling ſize, the wood round and perfectly ripened. Pots are to be filled with rich light mould that has been well meliorated and prepared ſome time before. The cuttings are then to be prepared for planting,

as

as follows. The bottom part ſhould be cut perfectly ſmooth; and if any of the old dead ſnags remain, they ſhould be cut off cloſe to the quick wood, and the top cut ſloping towards the back of the hot-houſe or frame when placed in them. I would recommend planting only one cutting in each pot, which as to ſize ſhould be a deep forty-eight; by that means the plants will grow much ſtronger and quicker than when many are crowded together, and the ſun and air will have a freer admiſſion to ripen the wood; for, when many are planted in one pot, they ſhade one another, and in a conſiderable degree prevent the ſun and air from paſſing freely among them. When the plants begin to get ſtrong, and the pots full of roots, it will be neceſſary to ſhift them from the forty-eights to thirty-two's.

The above mode is beſt adapted for private gardens; but for nurſerymen, &c. who raiſe plants for ſale, and cannot conveniently ſpare ſo much room, it may be neceſſary to plant three or more cuttings in each pot.

The ſame rules for watering, tranſplanting, ſhifting, &c. are to be obſerved here as for Seedlings.

A method very frequently practiſed by nurſerymen and gardeners, when they wiſh to have their plants fit for ſale the ſame year, is to plant them in pots, and place them in the hot-houſe, among the tan, on the flues, or round the curbs of the pit. I ſaw this method practiſed laſt year, with great ſucceſs, by Meſſrs. Lee and Kennedy, in their hot-houſe at the Vineyard, Hammerſmith.

They may be raiſed in this manner, either planting them ſingly in ſmall pots, or ſeveral in a pot, according to its ſize, tranſplanting them ſeparately when they have taken root. In proceeding thus, it will be neceſſary to have a hot-bed ready, to plunge the pots in as ſoon as they are tranſplanted. By this means you will forward their growth very much, and before Autumn have them fit for ſale.

Vines are alſo propagated by layers in the following manner.

They may be propagated by ſtools in the open quarters, in the ſame manner as nurſerymen propagate foreſt-trees and ſhrubs; but the beſt way is to take layers from walls or palings, obſerving to train the ſhoots at full length during the Summer. Then, about the month of February, take ſome of the fineſt and ſtrongeſt ſhoots, and lay them acroſs the foot-path into pots (twenty-fours or ſixteens) filled with freſh mould, and plunged in the ground about two inches below the ſurface; at the ſame time making an inciſion or two in the old wood, or giving it a twiſt juſt below a joint: they will generally take without notching or twiſting; yet, as it is the ſurer way, I would adviſe it to be done. (Introducing the ſhoots through the bottom of the pots is now laid aſide, as the layers generally have, when this method is followed, larger roots below than in the pots.) The layers ſhould then be cut, leaving two or three ſtrong eyes upon each.

When the ſhoots begin to run, they ſhould be tied to long ſtakes, to prevent their being broken by the wind. All the runners and ſide-ſhoots are to be picked off, leaving only two or three fine ſtrong ſhoots on each plant, which ſhould be trained at full length during the Summer.

After the ſhoots are laid, it will be neceſſary to mulch them with good rotten dung, or rotten leaves, which will keep the mould moiſt; and in very dry Summers, ſuch as the laſt (1800), it will be neceſſary to give them a good watering once or twice a week: this will waſh in the dung or leaves about the roots, and cauſe the layers to ſhoot more vigorouſly.

By this method of laying, you may have two or three rows of layers from one wall:

taking care to lay the branches alternately, and to keep the pots plunged about two inches below the level of the ground.

In chooſing Vines from the nurſery, I would recommend thoſe which have the ſtrongeſt and longeſt ſhoots.

If the foregoing directions are properly attended to, the plants will be well rooted in the pots before Autumn, and fit for planting in vineries, hot-houſes, &c.

When any are to be planted out, they ſhould be carefully cut off from the mother Vine and carried in the pots to where they are intended to be planted; taking care to preſerve the ball as much as poſſible when they are turned out of the pots.

If the ſeaſon be warm and fine, the Grapes of early kinds ripen very well on theſe layers before they are taken up; and, if properly managed, they will bear ſome fruit the firſt year after planting. One of the ſtrongeſt ſhoots muſt be left nearly at full length, cutting it as high as the uppermoſt full bud, leaving nothing but round well-ripened wood. If there are three ſhoots, the remaining two ſhould be cut ſo as to leave only two full eyes upon each, which ſhould be trained at full length, as before directed, to produce fine wood for next year. The ſhoot which was trained the preceding year ſhould then be cut down, leaving only two ſtrong eyes to produce wood for the following year; and ſo on every year, cutting the branches alternately; by ſo doing, you will be able to keep your walls always covered with fine healthy bearing wood. Thus a great deal of time is ſaved in furniſhing hot-houſes, vineries, &c.

This method of laying is practiſed with great ſucceſs by many nurſerymen in the neighbourhood of London; in particular by Meſſrs. Gray and Wear at Brompton-park nurſery, and by Meſſrs. Kirke at Brompton; each of whom raiſes annually ſeveral hundred plants, for which they find a great demand.

If any Vines that have been raiſed from ſeed ſhould not prove to be of a good flavour, they will be very fit to graft or inarch the finer ſorts of Vines on: as the coarſer ſorts grow more vigorous than the finer, they are, for that reaſon, fitter for grafting or inarching.

The beſt manure for Vines is a mixture of vegetable mould *, rotten ſpit-dung, and freſh loam (turf and all); this ſhould be thrown in a heap, and frequently turned, for a year or two before it is uſed.

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* For producing vegetable mould, ſee p. 129.

Observations and Experiments on the Training and Pruning of Vines.

The following is the method that I purſued with ſome Vines which were planted againſt the piers of a South wall, and among old Peaches, Nectarines, Plums, &c.

When I took them in hand, the fruit was ſo ſmall and hard as to render it unfit to be ſent to the table. The Vines were trained upright, which cauſed them to grow ſo luxuriantly that the ſap flowed into the branches inſtead of the fruit.

In the year 1789 I let two ſtrong branches grow to their full length without topping them in the Summer. In 1790, I trained them in a ſerpentine form (*See* PLATE X.), leaving about thirty eyes on each ſhoot, which produced one hundred and twenty fine bunches of Grapes, weighing from one pound to a pound and a quarter each. Every one that ſaw them ſaid, that the large ones were as fine as forced Grapes; while the ſmall ones produced from branches of the ſame Vine, trained and pruned in the old way, were bad natural Grapes, and not above twice the ſize of large Currants.

More fully to prove the ſucceſs attending this experiment, I next year trained five plants in the ſame way, allowing the ſhoots intended for bearing wood to run to their full length in Summer; training them wherever there was a vacancy between the old trees; where there was none, I ran them along the top of the wall, without topping them. In Winter I trained them in a ſerpentine manner ſo as to fill the wall as regularly as poſſible: they were as productive as thoſe in the former year.

After a three years' trial, I thought I was warranted to follow the ſame practice with the whole; and in the year 1793 I ſent, for the uſe of his Majeſty and the Royal family, three hundred and ſeventy-eight baſkets of Grapes, each weighing about three pounds, without planting a ſingle Vine more than there were the preceding year, in which I was able to ſend only fifty-ſix baſkets of the ſame weight; and thoſe ſo bad and ill-ripened that I was aſhamed of them, as they were not fit to be ſent to the table.

In this year there was more than a quarter of the crop deſtroyed by birds and inſects, and rotted by the wet.

Although the above ſtatement is within the bounds of truth, it may appear to the reader like an exaggeration; but it is in the power of every one who will follow the directions here given to prove the advantage that will accrue from this method of training.

The above experiments were all made on the natural walls, and I hope will be ſufficient to convince every unprejudiced perſon of the great advantage that the ſerpentine method of training Vines poſſeſſes above the common way.

It may be proper to obſerve, that the ſhoots ſhould be brought as near as poſſible from the bottom of the Vine, that the wall may be well covered. When the walls are high, and the ſhoots from the ſerpentine branches ſtrong, we ſometimes let them remain; but if the walls are low, and the ſerpentine branches produce weak ſhoots, we cut them out in the Autumnal pruning, and train up the ſtrongeſt of the young wood in their room; as directed in the explanation of Plate X.

On the Pruning and Training of Vines.

It is to be obſerved, that the wood muſt be ſtrong, or the Vines will produce ſmall bunches. If that be the caſe, cut them down to two or three eyes, in order to have ſtrong wood for next year. Vines bear their fruit on the wood that was produced the preceding year. If there be a great deal of old naked wood on them, as generally is the caſe, with ſome ſmall weak ſhoots at the extremities, always cut them down as near to the ground as poſſible; you will then have no fruit for that year. Or you may cut every other ſhoot, leaving the old ones to produce ſome ſmall Grapes. The next year you will have plenty of fine wood, provided you take care to nail in the ſtrongeſt ſhoots, and pick off all the ſide-ſhoots that are produced from the eyes, pinching them off with the finger and thumb, or cutting them out with a ſharp penknife cloſe to the bud or eye; but never twiſt them; for by twiſting them you will hurt the bud that produces the Grapes next year; always obſerving to cut as near to a bud as poſſible, and taking care to lay in the wood very thin in Summer, that the ſun and air may be freely admitted to ripen it: by theſe means it will grow very ſtrong. Take care alſo to keep the ſhoots nailed to the wall, which will prevent their being broken by the high winds; obſerving to pick off all the ſide-ſhoots every time you nail them, which ought to be done ſeveral times during the Summer months, according to the quickneſs of their growth. In fine weather they will grow ſo very quick, that you will have occaſion to look over them once every fortnight or three weeks, if you wiſh to have them in good order. Never ſuffer the Vines to run together in a cluſter, and to mat, which will infallibly ruin them for bearing the ſucceeding year. Top the ſhoots that have been trained in a ſerpentine manner, as ſoon as the Grapes come to the ſize of very ſmall Green Peas, a joint or two above the fruit; but never top the leading ſhoot, nor that which you intend ſhould bear fruit next year.

I ſhall now give ſome directions for the ſecond year's pruning.

I would never recommend the pruning of Vines till the beginning of February, except in ſuch a ſeaſon as the preſent; for they are more forward now (in the middle of January) than they were laſt year in the latter end of March: this is owing to the fine Autumn and mild Winter, and the wood being ſo well-ripened in the preceding Summer. It is, however, very common with ſome to begin pruning ſoon after the fall of the leaf, before the wood becomes hard; but if a froſt ſets in before the wood is hard, in particular after wet Summers and Autumns, it will be very much injured; I have frequently ſeen it almoſt killed after Autumnal pruning. We often have fine weather in the months of October, November, and December, with ſun and drying winds, which helps to ripen the wood after wet Autumns.

When the Vine leaves begin to fall, remember always to take a ſoft broom and ſweep them off upwards in a gentle manner, which will be of great ſervice in aſſiſting to harden the wood.

When you begin to prune in February, always make choice of the ſtrongeſt and longeſt ſhoots, leaving them as long as you find the eyes good and plump, and the wood round; but by no means leave them when they become flat; as in that caſe they ſeldom bear fruit; and if they do, it will be very ſmall. I never lay in any that has leſs than fifteen, and from that to thirty good eyes, according to the ſtrength of the ſhoot, which will produce two bunches from every good eye. I have had ſeventy bunches of grapes from one ſhoot. The ſhoots that have borne fruit in the preceding year ſhould be cut out next year, except when you want to fill the wall, and the ſhoots are very ſtrong. You will always get plenty of fine healthy young wood if you are careful when you prune in the Winter; there-ore never leave any but fine ſtrong wood, always cutting at the ſecond, third, or fourth eye; remembering to rub the loweſt bud off, and that which comes out at the joint between the new and laſt year's wood. By theſe means you will get as much fruit from theſe ſhort ſhoots as you would have by the common way of pruning. You muſt always obſerve to leave two or three of the ſtrongeſt ſhoots for next year's bearing wood, and never top them. If you have not room to train them, you may lead them over the tops of the other trees, if the Vines are planted againſt Piers; or you may run them behind the ſtandards, if there be any, which is generally the caſe when the walls are high; thus you will cover all the wall, which will have a very beautiful appearance when the fruit is ripe, beſides furniſhing a plentiful ſupply of fine Grapes for the table. You may run the ſhoots at the bottom of the wall behind the dwarf trees, or you may tack them down over the top of the wall on the other ſide, provided the walls are low. I have had very fine Grapes on Eaſt and Weſt walls, in good ſeaſons, between Peaches, Plums, &c. particularly when the trees are young. You muſt keep cutting in the Vines as the other trees grow and fill up the walls. I alſo train them over the tops of trees on each ſide; which never does any harm to the trees below, provided you keep them nailed to the wall. I have alſo planted Vines between trees on North and Eaſt aſpects, and trained them over the tops of the South and Weſt walls to fill the upper parts, till the Peaches and Nectarines cover them. I then cut away part of the Vines, leaving only as many ſhoots as I may think neceſſary.

Two years ago I removed ſome old Apricots that covered a wall about one hundred and ſixty-five feet long, and planted them againſt a new wall, leaving five Vines that were planted againſt the Piers. Theſe five plants have, in the courſe of two years, covered the above wall from top to bottom, and bear plenty of fine Grapes every year. I alſo moved an old Vine on a wall near to the above, and cut it in pretty cloſe; it has in three years ſpread twenty-ſix yards, and bears very fine fruit.

Againſt one of the Piers had been planted a black Hamburgh Grape, and at the other ſide of the ſame Pier was planted a Muſcadine, at the diſtance of about two feet from each other; I pruned them both according to my method, and, the ſecond year after, they produced one thouſand one hundred bunches of fine Grapes.

I alſo tried an experiment by taking ſome ſhoots from a South wall, opening the ground deep enough to lay them in acroſs the footpath at the diſtance of about four feet from the wall, and tied them to ſtakes, training them as Eſpaliers, laying in the wood as directed for walls, and keeping them as low as poſſible, that they might not ſhade the bottom of the wall; I alſo pruned them as I do thoſe againſt walls, laying the ſhoots in very long, except thoſe that were intended to bear fruit next year, from which I took off all the ſide-ſhoots and runners againſt the wall and Eſpaliers. In a favourable ſeaſon theſe bear very fine fruit, better than what is got from the walls by the old method of pruning.

Always obſerve to uſe the Compoſition as ſoon after pruning as poſſible. As the Vine is very porous, it ſoon imbibes the wet and moiſture, which brings it quickly to decay.

If at any time a Vine ſhould be cut late in the ſeaſon, it will be apt to bleed much; in that caſe, the powder muſt be applied, repeating the application till the bleeding ſtops.

I cut two ſtrong Vine-branches in the month of June and three more in July, in very hot weather, on purpoſe to try the effect of the powder in ſtopping the bleeding. The ſap roſe ſo ſtrong that it worked out at the top in a froth; I applied the powder, which in a ſhort time entirely ſtopped it.

Although the foregoing directions and obſervations are chiefly for Vines on the natural wall, I have recommended the ſame method to be practiſed for forced Grapes.

I shall now give some Directions for the Watering of Vines.

After the Grapes are ſet and begin to ſwell, you may water them with the Barrow Engine, ſprinkling them all over the leaves and fruit, preſſing your forefinger over the top of the pipe; by doing this you can throw the water as fine as ſmall rain, which will waſh all the duſt off the Vines and leaves, that are frequently covered with it, eſpecially if the garden be near a public road, as is the caſe at Kenſington. You ſhould alſo waſh the inſects off the trees.

In fine weather I ſprinkle all the wall-trees three times a week, which keeps them clear from inſects, and promotes the ſwelling of the fruit; but this operation muſt never be performed when the nights are cold and froſty. You ſhould begin to ſprinkle the trees when the ſun is in an oblique direction, or gone off the wall, which may be about four o'clock on a South aſpect; by doing it at this time, the leaves will have time to dry before night, and ſo prevent the froſt, if there ſhould be any in the night, from injuring them. In very hot and dry weather, give the trees a good bottom watering once a week, which will forward the ſwelling of the fruit. Vines require a great deal of watering; but when the fruit is fully ſwelled, you ſhould leave it off; particularly when the nights begin to get cold, as it would hurt the flavour of the fruit.

We ſhall ſay ſomething in this place reſpecting the preſervation of Grapes from flies, waſps, and birds; but for full directions on that head, ſee the Chapter ON INSECTS, &c.

As ſoon as the large fly makes its appearance, you muſt provide plenty of bottles a little more than half filled with ſome ſweet liquor to entice the flies to enter them, where they will be drowned. You muſt hang the bottles on the nails at proper diſtances all over the Vines, and alſo place ſome of them at the bottom of the walls. The blue fly comes much earlier than the waſp, and you will find it no leſs deſtructive to the fruit. It will therefore be neceſſary to hang up the bottles betimes, in order to deſtroy as many of them as poſſible before the waſp makes its appearance, and have the bottles ready for this ſecond enemy.

When the Grapes begin to ripen, you will be troubled with other enemies; the birds will now begin to attack the fruit; it will then be neceſſary to bag ſome of your fine handſome bunches, but to bag them all would be an endleſs job, if you have a full crop and a large garden. I have had five men bagging for three weeks, and yet could not bag the half of what were on one wall.

Where the bunches are very thick, the quickeſt way is to cover the trees with nets, or buntine (a kind of ſtuff of which ſhips colours are made), which will admit a free air to the Grapes, and will dry ſoon after rain. They will alſo be a good covering for the trees in the Spring, in cold, wet, or ſnowy weather. Always obſerve, that the bunches of Grapes ſhould be kept under the ſhade of the leaves till they begin to ripen; then you may begin to pick off the leaves which cover the fruit, (leaving thoſe a little above it to be a ſhelter from the wet and froſt in the nights); this will aſſiſt the ripening of the fruit; and take off only a few leaves at a time, according to the quantity of Grapes to be gathered at once: by theſe means your fruit will continue three times as long in ſucceſſion as it would if the leaves were picked off all at one time.

I have often ſeen all the leaves taken off from the fruit ſoon after it was ſet, which prevents it from ſwelling, and the fruit will become hard and ſmall, and will generally crack.

When the leaves are not too thick, they admit the rays of the ſun to paſs through, and a warm glow of heat will be reflected from the wall.

You may find it convenient to let the Grapes hang as long on the walls as you can: I have often let them hang till the middle of November, only covering them with nets, or buntine.

When the froſt begins to ſet in ſharp, you ſhould then gather the Grapes. Where there are ſeveral bunches on one branch you may cut it off, leaving about ſix inches in length, or more, of the wood, according to the diſtance between the bunches, and a little on the outſide of the fruit at each end: ſeal both ends with ſome common ſealing-wax, ſuch as Wine Merchants uſe for ſealing their bottles with, which you may buy at the Wax Chandler's; then hang them acroſs a line in a dry room, taking care to clip out, with a pair of ſciſſars, any of the berries that begin to decay or become mouldy, which if left would taint the others: In this way I have kept Grapes till the ſixth of February; but, if they are cut before the bunches are too ripe, they may be kept much longer.

Having plenty of Grapes in the Winter makes a great addition for the table; and, if properly kept, they will be of a much finer flavour than the Portugal Grapes, which are generally at a very high price during the Winter and Spring.

Grapes may alſo be kept by packing them in jars (every bunch being firſt wrapped up in ſoft paper), and covering every layer with bran, which ſhould be well dried before it is uſed, laying a little of it in the bottom of the jar; then a layer of Grapes, and ſo on, a layer of bran and of Grapes alternately, till you have filled the jar; then ſhake it gently, and fill it to the top with bran, laying ſome paper over it, and covering the top with a bladder tied firmly on to exclude the air: then put on the top or cover of the jar, obſerving that it fits as cloſe as poſſible. Theſe jars ſhould be kept in a room where you can have a fire in wet or damp weather.

CHAPTER IX.

OF FIGS.

Different Sorts deſcribed—Of Raiſing, Pruning, Training, and Sheltering Fig-Trees.

THE Fig has been cultivated in England ever ſince the year 1562. Some of the oldeſt that we know of in this kingdom are in the Archbiſhop of Canterbury's gardens at Lambeth.

This genus of Plants is arranged in the third order of Linnæus's twenty-third claſs, entitled Polygamia Triœcia.

The following are the Sorts beſt worth cultivating in this Country.

1. The Brown, or Cheſnut-coloured Iſchia Fig. This is one of the largeſt that we have: it is of a brown or cheſnut colour on the outſide, and purple within; the grains are large, and the pulp ſweet and high-flavoured. It ripens in Auguſt; and if planted againſt a hot-wall, two crops may be obtained annually.

2. The Black Genoa Fig, is a long fruit of a dark-purple colour, the inſide being of a bright red, and the fleſh very high-flavoured. It ripens in the latter end of Auguſt.

3. The Small White Early Fig. The ſkin of this fruit is of a pale yellow when ripe: the fleſh is white and ſweet. It is ripe about the latter end of Auguſt, or beginning of September.

4. The Large White Genoa Fig. This is a large fruit, the ſkin is thin and yellow when ripe, and red within. It is a good fruit, and is ripe about the latter end of Auguſt. This and the preceding bear two crops annually.

5. The Black Iſchia Fig, is a middle-ſized fruit; the ſkin is almoſt black when ripe, and the inſide of a deep red. The fleſh is high-flavoured, and the trees good bearers.

6. The Brown and Black ſmall Italian Figs, are cultivated in pots; the fruit is ſmall, round, and very delicious. I have gathered from one plant in a twenty-four pot two dozen of Figs at one gathering.

7. The Malta Fig. This is a ſmall brown Fig; the ſkin of a pale-brown, the inſide of the ſame colour; the fleſh is ſweet and high-flavoured. It is ripe in Auguſt and September.

8. The Murrey, or Brown Naples Fig, is a pretty large fruit, of a light-brown colour, and the inſide nearly of the ſame colour; the fleſh is well-flavoured; and it ripens about the middle of September.

9. The Green Iſchia Fig, is an oblong fruit with a green ſkin; but, being thin, is ſtained through of a browniſh caſt by the pulp when full ripe. The inſide is purple, and the fleſh high-flavoured; it is ripe about the middle of September.

10. The Madonna Fig, commonly called the Brunſwick, or Hanover Fig, is a large pyramidal fruit; the ſkin brown, the fleſh a lighter brown, coarſe, and has but little flavour. It ripens about the middle of September.

11. The Common Blue or Purple Fig, is a large oblong fruit, ripens in Auguſt, and is a good bearer.

12. The Long Brown Naples Fig. The ſkin of this fruit is of a dark brown when ripe, the fleſh inclining to red; it has large grains and a good flavour, and ripens about the beginning of October.

13. The Small Brown Iſchia Fig, is a ſmall pyramidal fruit; the ſkin of a light brown; the fleſh of a purple caſt, and of high flavour. It ripens in October.

14. The Yellow Iſchia Fig, is a large fruit, the ſkin yellow, and the fleſh purple and well-flavoured. It ripens in October.

15. The Gentile Fig, is of a middle ſize, roundiſh fruit, the ſkin yellow, and the fleſh inclining to the ſame colour. It has large grains, and a good flavour; ripens very late, and the trees are but indifferent bearers.

There are also the following, viz.

Beſt Early White.
Black Provence.
Cyprian.
Ford's Seedling.
Green Naples.
Large Black.
Large Blue.
Marſeilles.
Milward.
Small Black Iſchia.
White Iſchia.
Yellow Cæſar.

Figs proper for a small Garden.

The Large White Genoa; Early White; Murrey Fig; Small Brown Iſchia, and the Black Iſchia.

In a good ſeaſon, the Brown or Cheſnut-coloured Iſchia, the Black Genoa, the Small White Early, the Murrey or Brown Naples, and the Common Blue, or Purple Fig, will ripen on ſtandards.

Figs are raiſed from ſuckers, layers, or cuttings, and will thrive in almoſt any ſoil, but do not like a wet bottom; they generally produce more fruit on a ſtrong loamy ſoil than on a dry one. Layers, or cuttings, are preferable to ſuckers.

Obſervations, &c. on Pruning Figs.

They ſhould never be pruned in Autumn or during the Winter: the beſt time is at the latter end of April or beginning of May; by that time you will ſee what ſhoots have been killed by the froſt in Winter. The end of thoſe branches more particularly will be hurt where the wood has not ripened well in Autumn: they ſhould be cut into the ſound wood, and as near to an eye as poſſible. When the branches have been ſuffered to run up leaving the bottom quite naked, you ſhould cut out every other branch as near to the ground as you can, which will furniſh the wall with fine young wood; obſerving to ſtop the ends of the ſhoots in the beginning of June; this will cauſe them to throw out ſide-ſhoots which will bear fruit the next Summer. By that time you will have plenty of fine wood; you may then cut down the reſt of the old branches that were left the preceding year, obſerving to prune them about the ſame time as you pruned laſt year: always remember to pinch off the ends of the ſtrongeſt ſhoots, except the leading ones, at the top bud.

When you prune in the Spring, never ſhorten the ſhoots, as the fruit is produced near the tops. There will be a great many fine ſhort ſide and foreright ſhoots which ſhould never be cut off but when they are decayed. Theſe ſhoots will ripen much better than the long ſtrong ones, and will not be ſo liable to be killed by the froſt in Winter. By following this method, you will have the trees covered with fruit from the top to the bottom of the walls, inſtead of having a few fruit only at the top, which is the caſe when the common method of pruning is practiſed.

When the Figs are about the ſize of ſmall Nutmegs, you ſhould pinch off the point of the top bud with your finger and thumb, or cut it with a ſharp pen-knife; and always remember to uſe the powder, wherever you cut or pinch, to ſtop the oozing of the milk, which, if ſuffered, would greatly exhauſt and injure the trees.

Take care not to lay in the branches too thick; they ſhould be from a foot to eighteen inches diſtant.

The trees muſt be covered in the beginning of Winter, before the froſt ſets in, otherwiſe the ends of the ſhoots will be hurt by the firſt ſharp froſt, before the wood is ripened and hardened, which will oblige you to cut them as before. When Fig-trees are very much injured in hard Winters, the beſt way will be to cut as near the ground as poſſible; and the ſecond year you may get them into a fine bearing ſtate, if you manage them as above directed.

I ſhall now give ſome directions as to the beſt method of covering them.

I generally cover them with bentings, or ſhort graſs, from the pleaſure-ground; which I find anſwers the purpoſe very well: after it is thoroughly dry, it may be put in a cock, covering it with ſtraw, to prevent the rain from penetrating into it, which will cauſe it to heat and rot; or it may be put into one of the ſheds. If you cannot procure graſs, get ſome dry moſs. Firſt cover the trees with laurel, yew, fir, or ſpruce boughs, and then tuck in the ſhort graſs or moſs among the branches, beginning at the top of the tree, tucking in the graſs, &c. as you deſcend, till you come to the bottom. Fern, when well dried, makes an excellent covering. You may thatch the tree on the outſide with the long leaves of the common fern; when you can get theſe, there will be no occaſion for ſhort graſs. Fern, when it can be procured, which it may in moſt country places, will be found preferable to laurel.

Figs may alſo be ſheltered in Winter by wrapping hay or ſtraw-bands round the branches of the trees; then open the ground, lay in the branches, and cover them over with mould about nine inches deep, leaving the ends of the ſhoots about three inches out of the ground, and covering the ground over with ſome rotten leaves, or old tan, &c. to keep out the froſt: you may alſo cover the roots of the trees in the ſame manner.

If the walls are low, and the borders broad, you may bring all the branches front ways; but when the walls are high you can only bring the ſide-branches forward in the above manner.

Some cover with reeds and ſtraw; the latter I by no means approve of, as it is very apt to harbour rats and mice, on account of ſome of the grain being left in it.

Be careful to obſerve, when you put on the graſs, that no mice, &c. have got amongſt it; and examine, during the Winter, that no rats or mice get among the branches of the trees that are covered againſt the walls; if they do, they will infallibly bark the branches, and in that caſe you will be under the neceſſity of heading the trees down.

I would recommend ſetting traps, ſuch as ſhall be deſcribed hereafter, near the roots of the trees, as ſoon as they are covered.

Take care not to uncover the Figs too ſoon in the Spring; and it ſhould be done partially, as frequently there are froſts and cutting winds in the months of April and May, which will infallibly kill the young fruit as they make their appearance in the Spring.

Thoſe branches which have been laid into the ground ſhould be taken up in the month of April, taking off the hay and ſtraw bands, and then nailed to the wall. Stick in among the branches ſome fern-leaves, or any other light covering, to protect them from the drying winds and froſts, till the fruit comes to the ſize of a large walnut, or rather till the leaves are ſufficiently large to protect the fruit.

The Italians, when they wiſh to forward the ripening of Figs, drop in a little ſweet oil, from a quill, into the eye of the fruit; but care muſt be taken not to hurt the ſkin, which would make the Fig burſt. This will make a difference at leaſt of a fortnight in the ripening.

As ſoon as the leaves begin to fall, bruſh them off with a broom, but by no means till they will come off eaſily. If they are forced off before they begin to wither and decay, the trees will bleed at the footſtalks. At the ſame time you ſhould clear the ſtalks of all the ſmall late fruit, which, if ſuffered to remain during the Winter, will rot, and injure the tree ſo as to prevent it from bearing the enſuing Summer. If you obſerve any milk oozing from the footſtalks, uſe a little of the Compoſition, which will ſtop it, and heal the injured part. By doing this, you will aſſiſt the ripening and hardening of the wood before the Winter froſts ſet in.

When you plant Fig-trees, let them be from twenty to twenty-four feet apart, and train them horizontally, which will render them much more fruitful than when they are trained upright, which cauſes them to run up in long naked wood.

Obſerve alſo to leave ſpurs, or ſhort ſhoots, all over the branches; and when the buds begin to ſwell, all the ſhort ſhoots ſhould be pinched, as before directed.

As the branches of ſtandard Fig-trees are very liable to be killed in ſevere Winters, it will be neceſſary to lay them alſo in the ground, wrapping them up in hay or ſtraw bands, as before directed for wall-trees. It will be ſometimes impracticable to lay down the middle branches; they muſt, therefore, be well covered with hay or ſtraw-bands, and the outſide ones laid down, going regularly round the tree, and taking particular care not to hurt them with the ſpade; then mulch them with rotten leaves, &c.

After hard Winters, I have frequently been obliged to cut Fig-trees down very near to the ground, and apply the Compoſition: in the courſe of two years the new wood has covered over the old ſtump, and the branches filled up the former ſpace, bearing alſo plenty of fine fruit.

In a plentiful year, when there are more than you want for the ſupply of the table, the remainder may be dried for Winter uſe.

CHAPTER X.

OF QUINCES.

The best Sort for the Kitchen Garden—Of their Propagation, Planting, and Pruning—Of Bark-bound Trees, and of those which have rough Bark.

THE Quince is called Cydonia, from Cydon, a town of Crete famous for this fruit.

It belongs to the fourth order of the twelfth Claſs of the Sexual Syſtem, Icoſandria Pentagynia. Linnæus has joined it to the Apple and Pear.

This is a very beautiful tree when in flower, and when the fruit is ripe in Autumn. It was cultivated in this country in Gerard's time.

The beſt ſort for planting in the Kitchen Garden is the Portugal, being the fitteſt for baking or ſtewing. It is of a fine purple colour when dreſſed, and is much better for Marmalade than any of the other ſorts. The oblong kind, and the Apple Quince, are alſo planted in fruit-gardens; and there are ſeveral other ſorts cultivated in the nurſeries about town, and planted in ſhrubberies for variety and ornament. The Portugal ſort is very uſeful to mix with Apples for making pies and puddings; for, when the Apples are flat, and have loſt their flavour, they add a quickneſs to them.

Of the Propagation and Pruning of Quince Trees.

They are eaſily raiſed by layers, or by cuttings taken from the tree in March. They ſhould be planted in a ſhady place, in rows at about a foot diſtant from each other, and about three inches from plant to plant in the rows. Mulch them with rotten leaves, or rotten dung, which will keep the ground about them moiſt; and water them frequently in hot weather. About Michaelmas thoſe that are well-rooted may be planted out, and thoſe that are not ſhould remain another year. They may alſo be propagated by budding or grafting; and theſe trees will bear ſooner, and be more fruitful, than thoſe raiſed by any other method.

The Quince-tree may be pruned much in the ſame way as you would prune an Apple-tree, taking care to cut out all the old diſeaſed and dead wood, and the croſs branches in the middle of the tree, which are apt to injure each other by friction. In general you will find old trees much hurt by injudicious pruning: in that caſe, you muſt head them down, cut out all the cankery parts, and alſo all the diſeaſed and dead wood where the tree is hollow, or where large branches have been cut or broken off; applying the Compoſition as for Apple-trees.

Quince-trees are very apt to have rough bark, and to be bark-bound: in that caſe, it will be neceſſary to ſhave off the rough bark with a draw-knife, and to ſcarify them when bark-bound; then bruſh them over with the Compoſition, as hereafter directed.

I would, however, adviſe to plant Quince-trees at a proper diſtance from Apples and Pears, as bees and the wind might mix the Farina, and occaſion the Apples or Pears to degenerate.

CHAPTER XI.

OF MEDLARS.

Different Sorts—Their Propagation and Manner of Treatment.

THE Medlar is ranged in the fourth order of Linnæus's twelfth Claſs, Icoſandria Pentagynia.

The Different Sorts cultivated in this Country are,

The Great Medlar with bay leaves, and the Dutch Medlar. Theſe, being the largeſt fruit, are generally cultivated in England. There is a ſmaller ſort, which is a variety of that called the German or Dutch Medlar; the fruit is ſmall; and the tree is more frequently planted in pleaſure-grounds than gardens.

The oriental ſort, according to Mr. Philip Miller, is called the Dwarf Cherry of Mount Ida, in Crete, where the ſhepherds feed upon the fruit. It is large, roundiſh, and of a fine red colour when ripe.

There are ſeveral ſpecies now growing in the gardens of this country, that have been introduced from North America, which are very ornamental in pleaſure-grounds and parks, and to whoſe fruit the deer and birds are very partial.

They are raiſed from ſeed, or by grafting; thoſe who wiſh to keep the ſorts true ſhould propagate them by grafting on their own ſtocks.

The Medlar requires much the ſame ſort of treatment as the Quince-tree. Cut out all the dead and cankery wood; and, when they begin to get ſtunted, head them down, and apply the Compoſition, as directed for Apple-trees.

Medlars ſhould hang upon the tree till they begin to rot, as thoſe who are fond of this fruit never eat it till the pulp is quite ſoft. It may be proper to obſerve here, that thoſe who wiſh to have their Medlars large and fine, muſt keep the tree thin of wood.

As many people are fond of the fruit of the Medlar, I would recommend planting ſome trees of the large Dutch ſort in the kitchen garden; the other ſorts may be planted in pleaſure grounds and Parks.

There is a ſort called the Nottingham Medlar, which is very much eſteemed by ſome for its ſharp and poignant taſte.

Medlars, as well as Quinces, ſhould be planted at a proper diſtance from Apple and Pear-trees.

CHAPTER XII.

OF GOOSEBERRIES.

Different Sorts of Gooseberries; and the Weight of many large new-ones from Manchester—The Propagation, Planting, and Pruning of Gooseberries —A Method of destroying Caterpillars.

THE Gooſeberry and Currant are ranged by Linnæus in the firſt order of his fifth Claſs, Pentandria Monogynia.

The Gooseberries common in this Country are,

Green Gaſcoin.
Smooth Green.
Early Black.
Small Early Red.
Large Smooth Dutch Yellow.
Hairy and Smooth Red.
Large Smooth Yellow.
Large Rough Yellow.
Common, and Large White.
Champaigne.

A List of the largest new Sorts shown in Lancashire last Summer (1800), *with their Colour and Weight, communicated by Messrs. M'Niven, Nurserymen, Manchester.*

Red Gooseberries.	dw.	gr.
Alcock's King	16	15
——— Duke of York	16	1
Boardman's Royal Oak	15	4
Brundrit's Atlas	17	1
Chapman's Peerleſs	15	21
Dien's Glory of England	16	2
Fairlow's Lord Hood	14	5
Fiſher's Conqueror	17	19
Fox's Jolly Smoker	15	8
Hall's Porcupine	13	20
Lomax's Victory	16	11
Maſon's Hercules	13	16
Taylor's Volunteer	16	17
Worthington's Glory of Eccles	14	10
Yellow Gooseberries.		
Brundrit's Sir Sidney	15	22
Davenport's Defender	15	12
———— Creeping Ceres	16	0
Hamnet's Kilton	15	9
Hill's Golden Gourd	13	17
—— Royal Sovereign	17	10
Leigh's Prince of Orange	15	0

	dw.	gr.
Parkinſon's Goldfinder	14	5
Robinſon's Crudus	13	17
Withington's Scepter	13	7
Green Gooseberries.		
Blakeley's Chiſſel	17	0
Boardman's Green Oak	14	1
Brundrit's Tickle Toby	14	6
Chadwick's Hero	13	10
Dean's Lord Hood	15	10
Mill's Langly Green	16	2
Read's Satisfaction	15	4
Robinſon's Stump	13	21
Smith's Green Maſk	13	20
Yates's Duke of Bedford	14	11
White Gooseberries.		
Adams's Snow Ball	12	22
Atkinſon's White Hall	14	8
Chapman's Highland White	12	0
Davenport's Lady	15	0
Gibſon's Apollo	14	20
Holding's White Muſlin	13	0
Kenyon's White Noble	13	6
Moor's White Bear	14	19
Woodward's White Smith	17	2

October 27, 1800.

In favourable Seaſons, many of the above ſorts have been known to weigh more by ſeveral pennyweights.

The following List is taken from the Catalogue of Messrs. Kirk, Nurserymen, at Brompton, near London.

Supreme Red.
Perfection Red.
High Sheriff of Lancaſhire.
Royal George.
Unicorn.
Rough Amber.
White Walnut.
Ackerley's Double Bearer.
Royal Oak.
Miſs Bold's.
Sparkler.
Akerley's Rodney.
Hampſon's Cæſar.
Monk's Charles Fox.
St. John.
Pigeon Egg.
Worthinglowe's Conqueror.
Golden Eagle.
Royder's Triumph.
Williamſon's Yellow Hornet.
Swingham.
Jackſon's Golden Orange.
Goliah Champion.
Warrington Red.
Golden Drop.
Coſterdiner Goliah Champion.
Hairy Amber.
Nixon's Golden Eagle.
Worthington's White Lily.
Laylord's Seedling.
Nixon's White Heart.
Riding's Old England.
Bakeley's Swingham.
Tillotſon's St. John.

On the Cultivation, &c. of Gooseberries.

Gooſeberries are raiſed from cuttings, or from ſeed, and ſome raiſe them from ſuckers; but this laſt is not a good way, as buſhes raiſed in this manner are more liable to throw out ſuckers than thoſe which are raiſed from cuttings or ſeed.

The beſt time for planting cuttings is about Michaelmas, always cutting them from the ſtrongeſt and cleaneſt ſhoots. The length of the cuttings ſhould be from ſix to eight inches, planting them on an Eaſt or North border, at the diſtance of one foot from row to row, leaving them about three inches above ground. By planting at this diſtance, you will be able to hoe and keep them clear of weeds. Water them frequently in dry weather during the Spring.

The Methods of Planting Gooseberries are various.

The Market-Gardeners about London plant them in rows, from eight to ten feet apart from row to row, and ſix feet from plant to plant in the rows. In that caſe, I adviſe pruning them in the beginning of October, and the ground between may be planted with Coleworts or Beans for a Spring crop; by ſo doing, there will be no occaſion to tread over the ground and hurt the Coleworts in pruning the buſhes; for, before the Gooſeberries begin to ſhoot, the Coleworts will be all cleared off the ground.

After this time (or before if you find it convenient) lay a good coat of rotten dung on the ground; then dig it and plant early Potatoes; but not ſo near to the Gooſeberries as to hurt them.

The roots of Gooſeberries ſhould always be kept clear to admit the ſun and air. In ſmall Gardens I would recommend planting them in a quarter by themſelves, at the diſtance of ſix feet between the rows, and four feet from plant to plant; or you may plant them round the edges of the quarters, about three feet from the path; you will then have the ground clear for cropping, and a man, by ſetting one foot on the border, can gather the Gooſeberries without injuring the crop.

As Gooſeberries love a rich ſoil, they ſhould be dunged every year, or at leaſt have a good coat of dung once in two years.

Never plant them under the ſhade of other trees, as it will injure the flavour of the fruit.

Of Pruning Gooseberry-bushes.

It is a practice too common in pruning Gooſeberries, to let them branch out with great naked ſtems, ſuffering them to remain in that ſtate for years. When that is the caſe, they ſhould be cut down near to the ground in the Winter pruning; this will make them throw out fine ſtrong healthy ſhoots which will bear fruit the ſecond year. Gooſeberry-buſhes, in general, bear their fruit on the ſecond year's wood. Care ſhould be taken in Summer to keep the middle of the buſh clear to admit a free air into them; leaving the fineſt and ſtrongeſt ſhoots from ſix to ten inches diſtant from each other. This will help to ripen and harden the wood. It is a practice with ſome to ſhorten the ſhoots in the Autumn or Winter pruning; this ſhould be always near to a wood-bud; which may be known by its being ſingle, whereas fruit-buds are in cluſters. The ſhoots may be ſhortened to eight or ten inches, according to their ſtrength. Some leave them at full length for three or four years, thinning out thoſe that are ſuperfluous. Always leave a proper number to be trained up between the full-length ſhoots, to ſucceed them when they are tired of bearing; then cut the old ones down to the young ones that are to ſucceed them. By theſe means you will always keep the buſhes in a conſtant ſtate of bearing.

You may obſerve, that thoſe branches which were cut the firſt year, will in the ſecond throw out ſhort dugs, or ſpurs, which produce the fruit; and theſe ſhould by no means be cut off, unleſs the branches are in a ſickly ſtate, and require to be cut cloſe down (as is the caſe this year, 1800), when the buſhes are overloaded with fruit. It will then be neceſſary to cut out a good deal of the old wood, to aſſiſt Nature to recover herſelf after producing ſo great a quantity of fruit. This year the buſhes are ſo loaded that the branches are bent down to the ground.

Gooſeberries are well worth paying attention to, as they ſupply the table ſo amply till the wall fruit comes in.

There have been conſiderable additions made to them, of late years, from the great attention that has been paid, by the gardeners and others of Mancheſter and its neighbourhood, to raiſing Gooſeberries from ſeed.

Their Catalogues now contain between four and five hundred ſorts or varieties; but ſome are ſo near each other as hardly to be diſtinguiſhed. By mixing up a rich ſoil to plant thoſe in which have been raiſed from ſeed, and by watering, ſhading, and thinning the fruit, they have grown to a ſize much larger than any that had ever been ſeen in this country. They have made it their principal ſtudy to improve this valuable fruit, and have given great encouragement, by eſtabliſhing ſocieties for diſtributing prizes annually to thoſe who raiſe the largeſt and fineſt new ſorts. But it muſt be allowed, that ſome of the largeſt are much thicker in the ſkin, and not ſo well flavoured as ſome of the old ſorts.

I enquired of Meſſrs. M'Niven, Nurſerymen at Mancheſter, how many good and diſtinct ſorts they could ſend me out of their numerous Catalogue; they told me, that they could ſend about eighteen or twenty ſorts, which they could anſwer for being good and diſtinct. I accordingly gave an order, and received all the ſorts that they could warrant good, which turned out to my ſatisfaction.

Great attention ſhould be paid to the cultivation of the early and late ſorts. In ſome old gardens, in particular, there are very valuable ſorts that have been of late too much neglected;

I would therefore recommend to thoſe who live in the neighbourhood of ſuch gardens, to obſerve their time of ripening, and to cultivate thoſe eſpecially which are early and late.

It is a practice with ſome to clip the tops of Gooſeberries with a pair of garden ſhears, as they would clip a thorn hedge; this I by no means approve of, as the fruit will not be half the ſize, nor of ſo fine a flavour, as when the buſhes are kept clear of ſuperfluous wood.

Care ſhould be taken in Spring and Summer to ſtock, or grub up, all the ſuckers from the roots of the buſhes, leaving their ſtems clear and unencumbered.

Many of the Lancaſhire ſorts are apt to grow horizontally, and the branches frequently trail on the ground, which renders them liable to be broken by high winds, eſpecially when they are loaded with fruit. In that caſe I would recommend two or three hoops to be put round them, to which the branches may be tied, to ſupport them, and prevent their being broken by the wind.

Thoſe who wiſh to have their Gooſeberries very late ſhould plant on North walls and palings, between the other trees, and they may be removed when the trees begin to meet. If laid in thin, they will bear very fine and handſome fruit. I would adviſe to plant the fineſt late ſorts; as by this method the table will be ſupplied much longer than by the common cuſtom of planting in quarters.

Immediately after pruning, I always apply the Compoſition to the ends of the ſhoots and cuttings; and I find it of great uſe in preventing the exhalation of the ſap, and preſerving the cuttings till they take root.

Gooſeberries are very much infeſted with a ſmall green caterpillar, which frequently devours both leaves and fruit.

You muſt, therefore, be very attentive, and obſerve their firſt appearance on the buſhes; for, if nor deſtroyed early, they will increaſe ſo faſt, that they will ſoon devour all the leaves, and the fruit will then be good for nothing. They make their firſt appearance generally on the edges and under-ſides of the leaves.

Take ſome ſifted quick-lime and lay it under the buſhes; but do not at firſt let any of it touch the branches or leaves; then ſhake each buſh ſuddenly and ſmartly, and the caterpillars will fall into the lime; if the buſh be not ſhaken ſuddenly, the caterpillars, on being a little diſturbed, will take ſo firm a hold as not eaſily to be ſhaken off. After this is done, ſift ſome of the lime over the buſhes; this will drive down thoſe which may have lodged on the branches. The caterpillars ought to be ſwept up next day, and the buſhes well waſhed with clear lime-water mixed with urine; this will deſtroy any caterpillars that may ſtill remain, and alſo the Aphides, if there are any on the buſhes.

CHAPTER XIII.

OF CURRANTS.

Different Sorts of Currants—Propagation, Planting, and Pruning of them—How to preserve them from Insects.

CURRANTS, with Gooſeberries, are arranged by Linnæus in the firſt order of his fifth Claſs, Pentandria Monogynia.

The ſorts moſt commonly cultivated in this country are, the Red and White Dutch Currants, and the common Black, and American Black Currants.

The following Sorts are also cultivated by the Nurserymen about Town, and in other parts of England, viz.

Common Red.
Champagne large Pale and Red.
Fine new White Dutch.
Long-bunched Red.
Striped-leaved Red.
White Cryſtal.
Large Pale and Red Dutch.

The Currant is the moſt uſeful of all the ſmall fruit, either for the table and kitchen, or for preſerving, making wine, &c. and continues longer in ſucceſſion than any other. With proper management, Currants will continue in uſe from June to November. Black Currants are very much eſteemed by ſome; yet they are ſeldom ſent to the table, but are very uſeful for making jelly, frequently taken for ſore throats, colds, &c *.

On the Propagation of Currants.

Currants may be raiſed from ſeed, layers, &c. When the trees are cut low, you may lay down ſome of the branches either in Winter or Spring, when the ground in the quarters or rows is dug, which ſhould always be done annually. In the Autumn following, theſe layers will have made fine roots; you may then plant them out where you wiſh them to ſtand, and they will bear fine fruit in the following Summer.

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* In Ireland, Black Currants are frequently ſteeped in whiſky, of which they make punch, and recommend it as a good medicine for coughs and colds. I once had two gallons of it ſent me by a friend for that purpoſe; ſome of it was taken in a glaſs of warm water by a perſon who was very much afflicted with a ſevere cough, and thought to be in a decline, which effected a perfect cure in three or four nights.

The Currants, for this purpoſe, ſhould be bruiſed and put in a jar, and the whiſky poured over them: let it ſtand for a week or fortnight, covering it cloſe down; then ſtrain it through a fine cloth or ſieve, and put it in bottles or caſks for uſe. Currants may be uſed in this manner with brandy, gin, or any other ſpirits. They may alſo be preſerved as Cherries, and ſent up to table.

Currants may alſo be propagated by cuttings, as Gooſeberries; always remembering to make choice of the ſtrongeſt and ſtraighteſt ſhoots.

Under the buſhes that have been covered for late fruit you will always find plenty of ſelf-ſown plants, which I would adviſe you to plant out by themſelves. Thoſe who make Currant-wine may ſave the ſeed, after the fruit is ſqueezed, and dry it: it may then be ſown in Autumn, or early in the Spring, on a bed of fine light earth; by which you will, moſt probably, obtain ſome fine varieties. By no means propagate them from ſuckers, as they never grow handſome, and are very liable to throw out a great many ſuckers.

In many gardens there ſtill remains a ſmall ſort of red and white currant not worth cultivating; I would therefore adviſe thoſe who have any of them in their gardens to root them up, and plant, in their room, the large Red and White Dutch, the long-bunched Red, and

Champagne large Pale Red. Currants may be planted out in the ſame manner as Gooſeberries, either in quarters or ſingle rows round the edges of quarters.

I would particularly recommend planting a few againſt a South or Weſt wall, or paling, which will produce fruit much earlier than in quarters, &c. Alſo to plant ſome between other fruit-trees on North walls, or palings, for latter crops; theſe may be covered with double nets, to preſerve them from birds; tucking in a few fern branches between the two nets, which will prevent the heat of the ſun and drying winds from ſhrivelling the fruit. In quarters they ſhould be covered with mats for the ſame purpoſe; at the ſame time permitting all the leaves to remain on the buſhes, to ſhade the fruit and make it keep the longer.

Pruning of Currant-Bushes.

The pruning of Currants is nearly ſimilar to that of Gooſeberries. You may begin in the Month of November, and continue till March, as it ſuits your convenience.

Currants ſhould never be left too thick of wood; and a great deal depends on the management of them in Summer, to have ſtrong and fine wood for the following Seaſon. If they have been neglected for ſome years, and ſuffered to run up to long naked wood, they muſt be cut down near the ground; they will then ſet forth fine ſtrong ſhoots. In this caſe, I would recommend heading down every other tree, and cutting the others partially, by taking out every other branch as near as can be to the ground, unleſs they are trained up with ſingle ſtems, in which caſe it will be neceſſary to cut them as near as poſſible to where the branches begin to break out and form the head.

In the Winter pruning, you muſt preſerve the ſtrongeſt and fineſt ſhoots, leaving them from nine to eighteen inches long, according to their ſtrength, and from eight to ten inches apart, and as regular as poſſible from top to bottom of the tree; taking care to cut out all the dead and weak ſhoots. Pay particular attention in Summer, and keep the middle of the buſh open to admit the ſun and air; preſerving the fineſt and ſtrongeſt ſhoots that are neareſt the ſtem. Some are fond of training them up with ſingle ſtems, to a conſiderable height, to form fine round heads, which are very ornamental, if not ſuffered to run up too high; as in that caſe they are liable to be broken by the wind, if not well ſupported by ſtakes. Care muſt be taken not to let the ſhoots run to more than ſix inches long; becauſe ſuch ſhort ſhoots will not be ſo liable to be damaged by the wind as long and weak ones are, eſpecially when loaded with fruit. I prefer dwarfs from three to four feet high.

The ſame manner of pruning, &c. will do for Black Currants; but, as they grow ſtronger than the Red or White, the ſhoots ſhould be left thinner, and laid in longer, which will make them produce larger and finer fruit.

Thoſe againſt walls and palings ſhould have the ſhoots laid in thinner than thoſe in the quarters, and trained as horizontally as poſſible, ſhortening them in the Winter pruning to a foot or eighteen inches, according to the ſtrength of the ſhoots.

As Currants are very liable to be devoured by earwigs which take ſhelter under their leaves and branches, bundles of bean-ſtalks ſhould be hung up ſome time before the buſhes are covered with mats or nets. If proper attention be not paid to this, the fruit will generally ſuffer very much from theſe inſects. After the buſhes are covered, take the mats off once in three or four days, and kill the earwigs that have got into the bean-ſtalks, which it will be neceſſary ſtill to keep hung up. As there is a ſweetneſs in

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the inſide of beanſtalks which attracts the earwigs, they very readily take ſhelter in them from rain.

By paying proper attention to the foregoing directions, you will be able to keep theſe deſtructive inſects under, and preſerve the greater part of the fruit.

Be particularly careful to ſtock up all ſuckers at the roots of the trees, and keep them as clean as poſſible; otherwiſe the ſuckers will prevent the ſun and air from penetrating to the roots, and greatly weaken the trees.

What has been ſaid above will, I hope, be ſufficient to direct thoſe who are fond of cultivating this valuable and uſeful fruit.

Currants are very liable to be infeſted with Aphides and other inſects, which ſhall be taken notice of in another place.

CHAPTER XIV.

OF RASPBERRIES.

Different Sorts of Raspberries; and of Propagating, Planting, Watering, Staking and Pruning them.

RASPBERRIES are a very uſeful fruit for the table; for preſerving, for making of jam, ſauce, &c. and continue a long time in bearing.

The Raſpberry belongs to the fifth order of Linnæus's twelfth Claſs, Icoſandria Polygynia, and is a native of England.

The following are the Sorts cultivated in this Country.

Early White.
Double bearing White.
Large Common White.
Large Red.
Large Red Antwerp.
Large White Antwerp.
Smooth Cane Double-bearing.
Woodward's new Raſpberry.

Of Propagating, Planting, and Pruning Raspberries.

Raſpberries are raiſed from ſuckers and layers.

They ſhould be planted in a piece of ground by themſelves, and (except the Early White) at the diſtance of about ſix feet from row to row, and four feet in the rows.

The ground ſhould firſt be well trenched and dunged, before the Raſpberries are planted. Make choice of the ſtrongeſt and fineſt plants that come out from the ſides of the ſtools, where they have been ſtanding for ſome years; or encourage the ſtrongeſt plants that come out betwixt the rows after digging, which ſhould be done annually. In digging the ground, you will frequently happen to cut the roots with the ſpade, which will occaſion a great number of ſmall plants to come up; of theſe ſelect the ſtrongeſt and fineſt, and hoe up all the ſuperfluous ones. But I prefer laying down ſome of the ſtrongeſt outſide ſhoots in the month of March; as by the following Autumn they will make fine roots, and may be planted out in a quarter or piece of ground where you intend them to remain. Theſe will not be ſo liable to throw out ſuckers as thoſe which are produced from ſuckers.

When you plant out freſh pieces of Raſpberries, it ſhould be done in moiſt weather, as the roots are very delicate, and liable to be hurt when expoſed to a dry air. If, however, they are planted in dry weather, take care to moiſten the roots with water, and cover them with wet litter, or leaves, during the time of planting.

In planting, open a trench with the ſpade along the line where the ſuckers or layers are to be planted; cut off all the ſmall fibry roots with a knife, leaving only the ſtronger roots; put them into the trench, and cover them with ſome earth; then water them well, and throw the remainder of the earth over them, letting them remain till you have finiſhed planting the piece; then, where you firſt began to plant, begin and tread the ground with your foot as hard as you can along each of the trenches, and in the ſame direction as you planted; then with a ſpade level all the ground ſmooth, and run it over with a rake, taking off any ſtones and rubbiſh that may be left on the ſurface.

In dry weather, the plants ſhould be watered two or three times a week till they have taken root. It will be neceſſary to ſtake the An-

twerp,

twerp, and other ſtrong-growing ſorts, with ſtout ſtakes; then run a couple of ſmall rails at top, to tie the branches to; which will prevent their being broken by the wind, or beaten down by the rain. The Early White and ſmaller ſorts may be plaited together at top, tying them round with the ſmall yellow willow, which will keep them together. Some of the Early Raſpberries may be planted between the trees on a Weſt aſpect, to produce early fruit before thoſe in the quarters come in. The Antwerp will thrive exceedingly well againſt North walls or palings, and will produce late crops. Such as are planted againſt walls or palings ſhould be tacked to them.

Where you find any of the ſmall Red and White Raſpberries, deſtroy them, and plant the following ſorts in their room; viz. the Large Red, the Smooth Cane Double-bearing, the Large Red and White Antwerps, the Large Common White, the Double-bearing White, and Woodward's New Raſpberry.

Some prefer pruning Raſpberries in Autumn, a practice of which I by no means approve. As they bear the fruit on the wood of the preceding year, they are very liable to be killed by the froſt in ſevere winters; but, by deferring the pruning till the month of February, you will have great choice of fine wood for bearing the following Summer; remembering to root out, or cut down, all the wood that bore fruit the preceding year, which generally dies; ſelecting only from five to ſeven of the moſt vigorous and ſtrong ſhoots from the laſt year's wood, to bear fruit the enſuing ſeaſon. Theſe ſhoots may be pruned to the length of three or four feet according to their ſtrength, if they are of the Smooth Cane Double-bearing ſort (which generally bears a ſecond crop in Autumn, and will in fine ſeaſons continue bearing from June to November); but, if the large Antwerp, the ſhoots ſhould be left five or ſix feet long.

The Early White, which never grows ſo ſtrong as the above ſorts, ſhould be ſhortened to two feet and a half, or three feet. Theſe ſhould be planted in rows about three feet diſtant from each other, and two feet from plant to plant in the rows; always remembering to keep them clear of ſuckers, and to cut out the dead, or laſt year's wood, as before directed; making choice of the ſtrongeſt ſhoots for bearing wood. But be careful not to cut off the little ſpurs on the ſides, which bear the fruit.

Raſpberries will continue in bearing five or ſix years; by which time you ſhould have a

freſh

freſh plantation to ſucceed them. The young plants will bear ſome fruit the firſt year, and come into full bearing the ſecond year after planting. If they be ſuffered to remain more than five or ſix years on the ſame ground, they will degenerate and bear ſmall fruit. Care ſhould be taken not to leave above eight or ten of the ſtrongeſt ſhoots, rubbing off or pulling up all the ſuperfluous ones; and to keep the ground well hoed and clear of weeds between the rows.

CHAPTER XV.

OF BARBERRIES.

The Different Sorts and their Culture.

THE Barberry is uſeful for preſerving and pickling, and for garniſhing of diſhes; the trees alſo have a fine effect in ſhrubberies and pleaſure grounds, being beautiful flowering ſhrubs. In Autumn and Winter they have a delightful appearance, from their various-coloured fruit. I would, therefore, recommend planting them in all ſhrubberies and pleaſure grounds. Thoſe who are fond of the natural harmony of ſinging-birds will find Barberries well adapted for attracting them to the ſpots where they are planted, moſt birds being very fond of them. They ſhould not, however, be planted near the ſides of public walks, as the flowers emit a very ſtrong and rather diſagreeable ſmell.

The Barberry is ranged, by Linnæus, in the firſt order of his ſixth Claſs, entitled Hexandria Monogynia.

The following Sorts are most esteemed for their Fruit, viz.

1. The Red Barberry without ſtones, which has an agreeable flavour when full ripe.

2. The White Barberry.

3. The Black Sweet; which is the tendereſt of them, and ſhould be planted in a warm ſituation.

4. The Common Red with ſtones. This is planted more for ornament than uſe, on account of its beautiful red berries.

The Barberry is a native of England.

Of Raising and Pruning Barberries.

Barberries are very eaſily propagated from ſuckers and layers, and require the ſame management in pruning as other flowering ſhrubs. I would always recommend planting them in pleaſure-grounds, and not in kitchen-gardens. On graſs lawns, in pleaſure-grounds of ſmall extent, they have a fine appearance, and are frequently planted in ſuch ſituations as ornamental flowering ſhrubs; they are alſo planted frequently in clumps.

When you wiſh to increaſe them, encourage the fineſt and cleaneſt ſhoots in Summer, by trimming all the ſide branches off thin ; and when you dreſs the ſhrubberies in Winter, lay down the ſtrong ſhoots, which will take root, and be fit to tranſplant in Autumn following. When deſigned for uſe, they ſhould be trained up as ſtandards and half ſtandards, and they will grow from ſix to twelve feet high. In Summer, trim off all the ſtraggling and ſuperfluous ſhoots ; ſo as that they may make fine handſome heads.

Barberries may alſo be raiſed from ſeed ; but ſuckers and layers are beſt for preſerving the ſorts diſtinct.

CHAPTER XVI.

OF MULBERRIES.

Different Sorts cultivated in England—Propagating, Planting, and Pruning of them—Of Restoring old and decayed Trees.

THE Mulberry, *Morus*, is a native of Perſia; whence it was introduced into the Southern parts of Europe, and is now commonly cultivated in England, Germany, and other countries where the Winters are not very ſevere. It is ranked in the fourth order of Linnæus's twenty-firſt claſs, Monœcia Tetrandria.

We are informed, that Mulberries were firſt introduced into this country in 1596; but I have reaſon to believe, that they were brought hither prior to that period, as many old trees are to be ſeen ſtanding at this day about antient monaſteries and abbeys; from which it is at leaſt probable, that they had been introduced before the diſſolution of thoſe houſes.

Four large Mulberry-trees are ſtill ſtanding on the ſite of an old kitchen-garden, now part of the pleaſure-ground, at Sion-Houſe, which, perhaps, may have ſtood there ever ſince that houſe was a monaſtery. The late Duke of Northumberland has been heard to ſay, that theſe trees were above 300 years old.

At the Priory near Stanmore, Middleſex (the ſeat of the Marquis of Abercorn), there are alſo ſome antient Mulberry-trees. The Priory was formerly a religious houſe.

In a very old garden at Chelſea, which belonged to the late John Browning, Eſq. (who was a very good botaniſt, and had a large collection of trees and plants), there is one of the largeſt Mulberry-trees that I ever ſaw, and which appears to be extremely old.

Gerard, who publiſhed his Hiſtory of Plants in 1597, ſays, in that book, that Mulberry-trees then grew in ſundry gardens in England.

Those commonly cultivated in this Country are,

1. The Common Black Mulberry-tree, which is much eſteemed for its delicate fruit. This is now common in moſt parts of Europe, except where the Winters are very ſevere. There is a variety of this with jagged leaves, and ſmaller

fruit; but Mr. Miller ſays, that it is a diſtinct ſpecies, a native of Sicily; and that the fruit has no flavour; conſequently it is not worth cultivating. There were ſome of theſe trees in the Botanic Garden at Chelſea.

2. The White Mulberry. This tree is raiſed in great abundance in Italy, and other Southern countries, for the leaves, to feed ſilk-worms *; though it is ſaid that the Perſians generally uſe the Common Black Mulberry for that purpoſe; and this latter is the only ſort raiſed for the ſake of its fruit, which is very wholeſome.

3. The Red, or Virginian, Mulberry-tree, which grows to a conſiderable height, and bears reddiſh berries.

The two laſt are cultivated, in this country, only for the ſake of variety.

Mulberries are raiſed from ſeed, or propagated from cuttings and layers.

Thoſe raiſed from ſeed have frequently male flowers, and produce no fruit; theſe, therefore, ſhould never be made choice of for fruit-bearing trees, unleſs they have been ſeen to bear in the nurſery.

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* This tree poſſeſſes the peculiar property of breeding no vermin, either while growing or when cut down; neither does it harbour any caterpillar, the ſilk-worm excepted. Evelyn's Sylva, by Hunter, Vol. II. p. 40.

The beſt bearing branches of old trees are to be choſen for cuttings and layers; for ſome branches of theſe trees produce only katkins, and trees raiſed from them will never produce fruit. If they are to be raiſed from layers, they will generally take root ſufficiently the firſt year to bear ſeparating from the parent tree, and ſhould then be planted in a nurſery, and trained up with ſingle ſtems. In four years they will be fit to plant out where they are to remain. They ſhould be planted at a proper diſtance to admit the ſun and air, as the fruit, when the trees are too cloſe, is very apt to turn mouldy; they ſhould alſo be ſheltered from the Eaſt, North, and Weſt winds.

But the beſt way of raiſing Mulberries is from cuttings of the former year's ſhoots, having one joint of the two year's wood. Plant them out in Autumn, if fine weather, or in the month of March, in rows nine inches apart, and at the diſtance of two inches in the rows, leaving only two or three buds above ground: mulch the ground with leaves or dung well rotted, to keep it moiſt, and the plants will require little watering. If they ſucceed well, they may, next ſeaſon, be tranſplanted into a nurſery, and treated as directed for layers. Theſe young trees, while they remain in the nurſery, ſhould be tranſplanted every three or four years.

I would recommend planting of Mulberries in graſs orchards and pleaſure grounds, becauſe the fineſt of the fruit, when ripe, frequently drops, which, if it fall on dug or ploughed ground, will be ſoiled and rendered unfit for uſe, as the earth will adhere ſo to the fruit as to render the cleaning of it impracticable; but if planted on lawns, or in graſs orchards, the fruit can be picked up without receiving any injury. Another reaſon for planting theſe trees on lawns or in orchards is, that, when full grown, they are too large for a kitchen-garden. The ſoil in which they thrive beſt is a rich, light, and deep earth.

As the fruit is produced on the young wood, you ſhould cut out only ſuch branches as croſs others, and ſuch as are decayed, or broken by any accident; at the ſame time apply the Compoſition. If, however, the heads ſhould become too full of wood, it will be neceſſary to thin them, as the fruit is larger and better flavoured where the heads are kept thin of wood.

I have found many of theſe trees in a very decayed ſtate, with the trunks quite hollow; and have tried the efficacy of the Compoſition on ſeveral of them, cutting out all the dead wood and cankery parts of ſome, and heading down others that were ſtunted and ſickly. After theſe operations they put forth vigorous branches, and bore excellent crops of fruit, more than double the ſize of that which they produced in their former ſtate.

I would adviſe thoſe, who have any old decayed Mulberry-trees, to treat them in the ſame manner; but thoſe which are very much decayed ſhould be headed down; this will throw them into a healthy bearing ſtate, and in two or three years they will produce plenty of fine fruit.

In the lawn in front of the houſe of John Grove, eſq. at Little Chelſea, there are four old Mulberry-trees, which a few years ago were ſo very much decayed, and ſo full of wounds and dead wood, that they produced very little fruit, and that of a ſmall ſize. I had all the decayed and rotten wood carefully cut out, and the branches trimmed, and then the Compoſition applied. In the firſt ſeaſon they ſent forth fine ſhoots, and in the ſecond produced plenty of fruit, of a better flavour, and double the ſize of that which they formerly bore.

As old Mulberry-trees produce, not only a greater quantity of fruit, but alſo much larger and of a finer flavour than young ones, it is well worth while to take ſome pains to repair the injuries which they may have ſuſtained by accidents or age.

I am ſorry to ſay, that this pleaſant and valuable fruit is but very little cultivated in this country *.

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* Gerard, in his deſcription of the Mulberry-tree, has the following curious paragraph: " Hexander in Atheneus affirmeth, that the Mulberry-trees in his time did not bring forth fruit in twenty years together; and that ſo great a plague of the gout reigned and raged ſo generally, as not only men, but boys, wenches, eunuchs, and women, were troubled with that diſeaſe."

CHAPTER XVII.

OF THE SERVICE.

The Cultivated Service, the Wild Service, and the Maple-leaved Service; with their Culture.

THERE are three ſorts of the Service-tree cultivated in England, viz. the Cultivated Service, the Wild Service, or Mountain-Aſh, and the Maple-leaved Service. The firſt is a native of the warmer climes of Europe; and the other two grow wild in different parts of England.

The Service belongs to the twelfth Claſs of Linnæus's Syſtem, entitled Icoſandria Trigynia.

Of the Cultivated Service.

This tree is well worth cultivating, both for its fruit and for ornament. It is beautiful in the month of June when in flower, and the fruit in Autumn has a fine appearance, and grows to a large ſize if the trees be kept thin, and not overloaded with wood. They may be planted in orchards among other fruit-trees; for, as they flower much later than Apples and Pears, there will be no danger of the farina intermixing with theirs. They may alſo have a place in plantations in the pleaſure ground, or ſingly on the lawn, or in rows by the ſides of gravel-walks: in this caſe, they ſhould be trained with ſtraight ſtems eight or ten feet high, and all the ſtraggling branches ſhould be cut in, to aſſiſt them in forming handſome round heads. Theſe trees may be intermixed with thorns, and will have a very good effect.

We have only two ſorts cultivated in the garden; viz. the Apple-ſhaped, and the Pear-ſhaped Service-tree.

Theſe trees are propagated from ſeed, layers, and cuttings. By raiſing them from ſeed you may perhaps obtain ſeveral varieties; but the beſt method of preſerving the ſorts, when you have fine varieties, is by grafting or budding.

Train the ſtem, if for ſtandards, ſix or eight feet high; but if for dwarfs, about three feet high; which latter may be planted in ſhrubberies. The fruit, when ripe, may be gathered and put in the fruit-room; letting it remain till nearly in a ſtate of decay: it will make a variety when ſerved up to table among the Autumn fruits.

The wood of this tree is very uſeful for making picture-frames, toys, &c.

When the trees are pruned, and where there are any decayed parts, the Compoſition ſhould be applied.

Of the Wild Service-Tree, or Mountain Ash.

The Wild Service is ſometimes planted in orchards among fruit-trees; but I would recommend planting it in pleaſure grounds, plantations, or on lawns, for ornament, where the different varieties of the fruit have a beautiful effect in Autumn; and the fruit gathered, when full ripe, and laid by ſome time to ſoften, has a very agreeable acid taſte.

The ſeeds, when properly dried, may be ſown in Autumn in beds of light mould; taking care to keep them free from weeds in Summer. In the following Autumn they may be tranſplanted into beds, or quarters (according to the number which you may wiſh to plant), and trained either for dwarfs or ſtandards.

By ſelecting the largeſt and fineſt fruit many varieties may be obtained from the ſeed; they may alſo be propagated from layers; but thoſe who are fond of having a great variety, and keeping the ſorts true, ſhould graft them.

If trained up with ſtraight clean ſtems, Service-trees will grow to the height of thirty or forty feet; in that caſe they ſhould be planted among foreſt trees, or in the back parts of large ſhrubberies. But thoſe who wiſh to plant them as flowering ſhrubs muſt head them down when young, to make them throw out horizontal ſhoots; they may then be planted among the middling-ſized ſhrubs, which will make a beautiful variety, both when in flower and when bearing fruit.

Wild Service-trees * grow to a conſiderable ſize when properly managed, and are very much uſed by wheelers, &c. on account of the wood being all, what they call, heart-wood.

Of the Maple-leaved Service-Tree.

This tree grows wild at Paddington, and in other parts of England, and is frequently forty or fifty feet high, with a large ſpreading head, making a fine appearance, and deſerves a place among foreſt-trees and in extenſive plantations and gardens. It bears large bunches of white flowers, ſucceeded by cluſters of brown fruit, which, when gathered full ripe, and laid by for ſome time, till it becomes ſoft, has a very agreeable tart flavour.

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* The fruit of the Wild Service is excellent food for Game and other birds.

This tree may be raiſed from ſeed, which ſhould be ſown in Autumn, or by layers; but thoſe who wiſh to raiſe them in the dwarf ſtate ſhould graft them very low, and train them from ſix to eight feet high. Some graft them on white-thorns; but I prefer their own ſtocks. If theſe dwarfs are trained up with fine heads, they will have a very good effect in ſhrubberies. If intended for ſtandards, train them up as high as you can: they will have a beautiful appearance in the back parts of ſhrubberies. They may alſo be trained without grafting, and planted on lawns for ornament. Some train them as Eſpaliers; but this I do not approve of, as they are not ſo ornamental, neither do they bear ſo well.

The wood of this tree is alſo very uſeful for mechanical purpoſes.

CHAPTER XVIII.

OF THE ALMOND.

Different Sorts of Almonds; their Propagation, and the Method of Pruning them—How to keep them during Winter.

THE Almond belongs to the twelfth Claſs of Linnæus, Icoſandria Monogynia, being joined with the Peach, and was introduced here in 1570.

Almonds are beautiful trees for planting in ſhrubberies and plantations, and deſerve a place in every pleaſure-ground, on account of their coming ſo early into bloom, and for the uſe of their kernels.

The following are the Sorts propagated in this Country for Ornament and Use, viz.

The Tender-ſhelled Almond; the Sweet Almond; the Common or Bitter Almond; the Sweet Jordan Almond; the Hard-ſhelled Almond;

mond; the Dwarf, and the Double-flowering Almonds. The laſt two, being beautiful early flowering ſhrubs, are planted for ornament only.

Almonds are propagated by budding them upon Plum, Almond, or Peach-ſtocks. The next Spring you may train them for ſtandards, or let them grow for half ſtandards; but the common way is, to bud them as high as you wiſh the ſtem to be; and the ſecond year after they may be planted out for good. If you are to tranſplant them into a dry ſoil, let it be done in October, when the leaves begin to decay; but if into wet ground, the month of February is the proper ſeaſon. Almonds budded on Plum-ſtocks thrive beſt in a wet ſoil, and on Almond and Peach ſtocks in a dry.

When the young trees are brought from the nurſery, they ſhould never be cut till the young ſhoots begin to break,—as directed for Peaches and Nectarines.

Almonds require nearly the ſame management in pruning as ſtandard Apricots. After wet Autumns, when the wood is not well ripened, hard Winters are apt to kill the ſhoots; in that caſe, they ſhould be cut down to the ſound wood; taking care to cut out the croſs ſhoots that rub againſt others, leaving the tree

open

open in the middle, pruning the ſhoots about the ſame length as Apricots, and according to their ſtrength. Never omit cutting out all the cankery parts, and decayed wood.

Some plant theſe trees out as ſtandards, and others as half-ſtandards, according to the ground and ſituation; always taking care to plant them in a ſheltered place facing the South, intermixing them in the back of the ſhrubberies with the taller flowering ſhrubs: or they may be planted on lawns for ornament, as they make a very beautiful appearance when in flower, or bearing fruit. If planted as dwarfs, they may be covered with poles ſtuck into the ground, thatching over the tops of the trees with ſome fern, or any other light covering, which will prevent the bloſſom from being killed by the froſt in February and March. After the fruit is ſet, and the leaves ſo far out as to cover it, if fine weather, the covering may be removed in the latter end of April or beginning of May, which will enſure a plentiful crop of Almonds; a very uſeful ſupply for the table in Autumn and Winter.

Thoſe who have plenty of walling ſometimes plant Almond-trees on walls, and ſometimes on eſpaliers.

Almonds may be preſerved in dry ſand, or bran, for uſe; but they muſt be thoroughly dried on ſhelves, or boards, in an airy place before they are put into the ſand or bran, otherwiſe they will get mouldy. They are preſerved only for their kernels, the other part of the fruit being of no ſervice.

CHAPTER XIX.

OF FILBERTS AND HAZLE-NUTS.

The Sorts commonly cultivated in England—Method of Culture—How to keep them in Winter.

FILBERTS and Hazel-nuts grow wild in woods and hedges, and are brought in great quantities to the London markets, and to thoſe of other large towns throughout the kingdom; employing a great many poor families during the Autumn, who otherwiſe might have very little to do, and of courſe be a burden on the publick.

This genus of plants is ranged in the eighth order of Linnæus's twenty-firſt claſs, Monœcia Polyandria.

The Sorts generally cultivated in England are the following, viz.

1. The Large Cob-nut.

2. The large long Nut, which produces very fine large fruit.

3. The Barcelona, or Spaniſh Nut, with large cups.
4. The Common Wood-nut, with red-ſkinned kernels.
5. The Filbert with white kernels.
6. The Filbert with red kernels.
7. The Large Cluſter Wood-nut.

Of Propagating and Pruning Nut-Trees,

Filberts and Nuts of all kinds are propagated from ſeed, layers, and ſuckers; but thoſe who wiſh to have fine ſorts ſhould graft the trees, or lay down in March ſome of the ſtraighteſt ſhoots, notched at a joint, pegging them into the ground; then cover them with earth about three inches thick, making baſins round them with edges of mould about two inches higher than the ſurface of the ground, to prevent the water's running off; water them ſometimes in dry weather, and mulch them with ſome rotten leaves, to keep them moiſt. By the following Autumn they will be fit to take up and plant out in beds in the nurſery, where they ſhould remain about two years, planting them out in Auguſt where you wiſh them to remain for good. If any of the layers have not taken proper root, they may be left till the Autumn following.

Filberts and Nuts may be planted on the outſides of woods, or in the back parts of ſhrubberies and pleaſure-grounds, or in large kitchen-gardens, in ſhady-walks; or for the purpoſe of hiding ſheds, ciſterns, &c.

When they are raiſed from ſeed, it ſhould be ſown in Autumn, in a light earth; and it will be neceſſary to cover the beds all over with ſlates, flat ſtones or bricks, to prevent the mice from eating the Nuts or carrying them off in Winter.

When at the Botanic Gardens, Chelſea, I once ſowed ſeveral quarts of large Barcelona Nuts, in pots, in two frames at a conſiderable diſtance from each other, the Nuts were all carried off by the mice in one night. On ſearching round the lining of a frame where we kept green-houſe plants in Winter, I found above a quart of the Nuts in one hoard, which I again ſowed immediately, covering them over with ſlates; from theſe Nuts I raiſed ſome very fine plants.

The Barcelona Nut-tree is rather ſcarce in England, but it is well worth cultivating; it is a diſtinct ſpecies, and grows to a fine timber tree. The Nuts that I ſowed, as mentioned above, were produced from a fine tree in the Botanic Gardens at Chelſea *.

Thoſe who are not in poſſeſſion of plants may procure them from Nuts freſh imported from Spain, by ſowing them as before directed. Great quantities are imported annually under the name of Barcelona, or great Spaniſh Nuts.

When in the Nurſery, Nut-trees ſhould be trained with ſingle ſtraight ſtems, to form fine heads from three to ſix feet high; cut off the leading-ſhoot at the height you would have the head formed, rubbing off all the lower buds, and leaving only as many at top as you think will be ſufficient to form a handſome head, and according to the ſtrength of the ſtem.

Nuts, when intended for keeping, ſhould be well-dried and packed in jars or boxes of dry ſand (and placed in a fruit-room, or dry cellar), well covered down to preſerve them from mice.

The ſhoots of Filbert and Nut-trees are very uſeful for ſtaking green-houſe plants and raſpberries, or for making withes to bind fagots, and for many other purpoſes in huſbandry.

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* This tree, at two feet and a half from the ground, meaſures about four feet in circumference.

CHAPTER XX.

OF CHESNUTS.

Different Sorts cultivated in England—Cheſnut-Trees are excellent Timber—How to Propagate, Plant, and Head them.

THE Cheſnut, Caſtanea, is a native of the South of Europe, and is ſaid to take its name from Caſtanea, a city of Theſſaly, where antiently it grew in great plenty. It belongs to Linnæus's twenty-firſt claſs, Monœcia Polyandria.

The ſorts moſtly cultivated in England are thoſe commonly called Spaniſh Cheſnuts, which run into great varieties when raiſed from ſeed; and a ſort called, in America, Chinquapin, or Dwarf Virginian Cheſnut; but this is only raiſed for the ſake of variety.

The former are very fine trees, and well worth cultivating both for uſe and ornament. The timber is reckoned equal to Oak, and, for making caſks, even ſuperior to it; as, when ſeaſoned, it is not ſo liable to ſhrink or ſwell as Oak. Theſe trees have alſo a very noble appearance, and are therefore very fit to plant in parks, &c.

Gerard ſays, that in his time there were ſeveral woods of Cheſnuts in England, particularly one near Feverſham in Kent; and Fitz-Stephens, in a deſcription of London written by him in Henry the Second's time, ſpeaks of a very noble foreſt which grew on the North part of it. This tree grows ſometimes to an amazing ſize. Not to mention thoſe abroad, there is one at Lord Ducie's at Tortworth, in the county of Glouceſter, which meaſures nineteen yards in circumference, and is mentioned by Sir Robert Atkyns, in his Hiſtory of that county, as a famous tree in King John's time; and by Mr. Evelyn, in his Sylva, book 3d, chap. 7, p. 232, fourth edition, to have been ſo remakable for its magnitude in the reign of King Stephen, as then to be called the Great Cheſnut of Tortworth; from which it may reaſonably be ſuppoſed to have been ſtanding before the Conqueſt. Lord Ducie had a Drawing of it taken and engraved in 1772. One of the prints is now in my poſſeſſion, and was a preſent from my much-eſteemed friend, the late Captain William Locker, of the Royal Navy, and Lieutenant-Governor of Greenwich Hoſpital *. Formerly a great part of London was built with Cheſnut and Walnut-tree; and at Sion Houſe, the ſeat of the Duke of Northumberland, the ſtables are built with them. from the old monaſtery at that place, which was taken down when the preſent manſion-houſe was built.

The beſt way of propagating Cheſnut-trees is from ſeed, gathered when thoroughly ripe; which is generally about the latter end of October; but they ſhould not be gathered till the huſks begin to open, and the Nuts appear of a browniſh colour; they will then drop of themſelves,

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* At Aſhted-park, near Epſom, the ſeat of Richard Howard, Eſq. there are a great many Spaniſh Cheſnuts, that were ſown by a gardener now living, one of which, at three feet from the ground, meaſures ſeven feet in circumference, and has a trunk upwards of fifty feet high.

Since writing the above, I have ſeen the old gardener, Thomas Davie (who is now 77 years old), and have had ſome converſation with him. He ſays, that at the age of 15 he bought three ſhillings-worth of Cheſnuts in London on purpoſe to treat his fellow-ſervants; but finding that they would not accept of them, he ſowed them in a bed in the garden at Aſhted, which then belonged to the Earl of Suffolk, and afterwards planted out the young trees where they now ſtand. Theſe trees are, therefore, at this time ſixty-two years old, from the ſeed.

ſelves, and ſhould be carefully picked up in the morning, and particularly after high winds; thoſe which are intended for eating, or for ſeed, ſhould be always ſuffered to drop of themſelves; they will be found much better than thoſe that are beaten down. If, however, the froſt ſhould ſet in early, you will be under the neceſſity of thraſhing them down, which ſhould be done in a dry day. All that fall in the huſk ſhould be thrown in heaps in a ſhed, or other convenient place, and ſuffered to remain three weeks, or a month, in that ſtate, to ripen. They ſhould then be taken out of the huſks, and the beſt picked out and laid up by themſelves, after being well-dried, on mats, or cloths, in a ſunny ſituation. They ſhould be laid up in the fruit-room, or granary, on ſhelves, or on a dry floor. Remember to turn them frequently. The inferior ones will do for ſowing, or they may be given to pigs or turkeys, who are very fond of them; they will be found very good for fattening poultry, eſpecially turkeys. If during the Winter they ſhould become damp or mouldy, they ſhould be turned and carefully wiped; and if ſpread at a moderate diſtance from a fire, or dried in an oven after the bread is drawn, and then packed in boxes, or jars, with thorough dry ſand, they will keep plump and good. Obſerve not to put them into the oven when too hot, as it will make them ſhrivel: and thoſe for ſowing muſt not be dried in this manner, as the heat of the oven would kill the germ. In a fine warm ſeaſon, I have ſeen them ripen as well and grow nearly to as large a ſize as foreign ones, when the trees were healthy; but in a middling ſeaſon they will do very well for ſowing, or for fatting pigs and poultry. Be careful to preſerve them from rats and mice, otherwiſe they will ſoon deſtroy vaſt quantities of them.

They may be ſown in beds of light earth in the month of November, if it be a dry Autumn, drawing the drills about nine inches apart, and about three deep. Plant the Nuts about an inch apart in the rows, with the points upwards, as bulbous roots are planted; then cover them with mould, and pat it down with the back of your rake. The beds ſhould be four or five feet wide, and a little raiſed towards the middle, to carry off the water. There ſhould be alleys between the beds, about eighteen inches wide, and about two or three inches deep; theſe will receive and carry off the rain-water, which otherwiſe would be apt to rot the Nuts. Thus, a five-foot bed will admit of ſix rows and a ſmall edging next the alley. If you find the mice begin to attack them, the beds ſhould be completely covered over with ſlates, flat ſtones, or bricks, till the Nuts begin to ſpring; they muſt then be taken off. If it be a hard Winter, it will be neceſſary, before the ſtones or tiles are put on, to cover the beds with ſome rotten dung, rotten leaves, or old tan, to preſerve the Nuts from the froſt. If it be a mild winter, and the Nuts have been ſown in Autumn, they will begin to vegetate before Chriſtmas; but if the Autumn be wet, I would adviſe not to ſow them till ſome time in February, or the beginning of March. By the Nuts being ſown in rows, you will have room to hoe betwixt the rows, and be able to keep them clear of weeds, which you could not ſo eaſily do if they were ſown broadcaſt. If it ſhould prove a very dry Summer, it will be neceſſary to give them a good watering once or twice a week, till the plants begin to get ſtrength. If they be well managed, by the end of October, or in the following Spring, you may tranſplant them into beds, in rows about a foot apart, and at the diſtance of four inches in the row, where they may remain for two years longer; taking care to trim all the ſide-ſhoots, leaving only one ſtraight ſtem.

Theſe beds may have alleys about the ſame width as before, with this difference, that the beds ſhould be two inches lower than the alleys, which muſt be well trodden, to keep the earth from crumbling down into the beds. Firſt level all your ground, then ſtretch the line from one end of the bed to the other, according to the ſize of the ground, and with your ſpade cut off the edging in the inſide of the bed, throwing the mould towards the middle of it: then remove the line to the other ſide of the bed, which ought to be from four to ſix feet wide, and cut the other edge, throwing the mould into the bed as before. When this is done, throw up ſome of the mould on the top of the alley, to make it about two inches higher than the bed, and tread the alley well down. Then begin to plant your young trees in rows acroſs the bed, a foot or fifteen inches apart, and about ſix inches in the row, digging the ground and planting as you proceed, alſo beating up the edges of the alleys with the back of your ſpade, to keep the mould from tumbling down into the bed. Proceed thus till you have finiſhed the bed, and ſo on till you have planted the whole. If it be dry weather, each bed ſhould be watered as you finiſh planting it, which being made a little lower

than

the alleys will retain the water that you throw on it, and will prevent the rain from running off: if the dry weather continue long, mulch the beds as before directed. Obſerve to keep them free from weeds, watering them as occaſion requires, and trimming up the plants with only one ſtem. In this ſtate they may remain two years, and, if any of the plants require it, ſtake them to keep them ſtraight. At the end of two years they will be fit for tranſplanting, and may be planted out for good, if they are properly fenced off from cattle; but if they are to be placed in an open expoſure, they ought firſt to be planted out in a piece of ground, properly prepared for the purpoſe, at the diſtance of two feet from row to row, and one foot in the row. If they have been planted in the Autumn (which I would always recommend, except in wet ground, or when the ſeaſon is wet) let them remain till next Spring twelvemonth, and then head them down to two eyes above ground, cutting as near as may be to an eye, and ſloping to the North, that the ſhoot which is thrown out may cover the ſtem in the firſt ſeaſon, which, if the buſineſs be rightly performed, it will do, and grow to the length of ſix or ſeven feet, according to the vigour of the ſtem. If they are not headed down in this manner, you will never have ſtraight handſome trees. If the ground be properly fenced off from cattle, thoſe that are planted out for good, at three years old, muſt be treated in the ſame manner after the firſt or ſecond year. It may, however, be neceſſary to obſerve, that young trees muſt not be headed down immediately after tranſplanting; they ought to be well rooted before that operation is performed; and it is alſo worthy of remark, that, the larger the ſtems are when they are headed, the ſtronger and more luxuriant will the ſhoots be.

I did not, at firſt, intend to have ſaid any thing of Cheſnuts and Walnuts; but, as moſt people are fond of them, and as they are generally ſerved up at table with the deſſert, it ſeemed proper to give ſome account of their culture, &c.

CHAPTER XXI.

OF WALNUTS.

Different Sorts described—Their Propagation, Planting, and Trimming—Great Utility of the Timber—Method of keeping Walnuts in Winter.

THE Walnut, Juglans, is a native Perſia; and the time of its introduction here is not known with certainty. It belongs to the twenty-firſt claſs of Linnæus's Syſtem, Monœcia Polyandria.

Thoſe commonly cultivated in this country are the following varieties of the common Walnut, viz. the Double Walnut, the Large Walnut, the French Walnut, the Thin-ſkinned Walnut, and the Late Walnut. The Hickery Nut from North America, the fruit of which is ſmall but well-flavoured, is alſo raiſed here, as is the Black Virginia Walnut; but this latter is cultivated chiefly for its timber. There are ſeveral other ſorts from North America, which are planted for variety.

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The beſt way of raiſing theſe trees is from the Nut, which ſhould be gathered when full ripe: thoſe with thin ſhells are to be preferred for this purpoſe. Walnuts, unleſs a ſharp froſt ſets in, which is very ſeldom the caſe before they are ripe, ſhould be ſuffered to remain on the trees till they begin to drop of themſelves: ſhaking of the tree will then bring them down. Beating them down with poles, as is uſually done, injures the trees very much, by breaking the young ſhoots: beſide, the Nuts never keep well when they are thraſhed down too early.

The Nuts may be ſown in drills in the ſame manner as Cheſnuts: the beſt time for doing this, if the ſeaſon be dry, is Autumn; and the Nuts muſt be thoroughly dry, otherwiſe they will be apt to rot before they vegetate. If the Autumn be wet, they may be ſown in the month of February or the beginning of March, and ought to be covered over as directed for Cheſnuts, to preſerve them from mice. If they thrive well, they will be fit for tranſplanting the firſt Autumn after ſowing; but, if not, they ſhould be ſuffered to remain another year. Bed them out in the ſame manner as directed for Cheſnuts, tranſplanting every ſecond or third year, until they are planted out for good. This will cauſe them to throw out fine horizontal roots, and bring them into a bearing ſtate much ſooner than when they make deep tap-roots. Train them up with fine ſingle ſtems to about ſeven feet high, before you ſuffer them to form heads; the branches will then be out of the reach of cattle. The time of tranſplanting them out depends on the progreſs that they have made in the nurſery; they ſhould be ſuffered to continue there until they have grown to a tolerable ſize, and to the height juſt mentioned as proper for ſtandards. The ground, where they are to be planted, ſhould be well ploughed or trenched, and the trees planted, at firſt, in rows ſix feet apart, and the ſame diſtance from tree to tree in the rows, in the quincunx order, and thus to remain till they come into bearing. This will be neceſſary, as there is no dependance on the ſort of fruit that trees raiſed from ſeed may produce. After you have made choice of thoſe which bear the beſt fruit, the other may be planted out for timber, or cut down for ſtakes, or any other purpoſe. The trees left for bearing muſt be thinned, by taking out every other tree in the remaining rows, as they increaſe in ſize, till they ſtand at the diſtance proper for full-grown trees; which may be from twenty-four to forty-eight feet according to the richneſs of the ſoil and the progreſs which the trees make.

In trimming the ſtems of Walnut-trees, cut off the ſhoots and ſmall branches cloſe to the bole: and in lopping, cutting out croſs branches, or ſuch as are damaged by winds and other incidents, always cut at a fork or eye, otherwiſe part of the branch will die and injure the tree. But, whether only a part or the whole of a branch be cut off, the Compoſition ought immediately to be applied.

Formerly Walnut-tree was much uſed for building, and for houſehold furniture; but Mahogany and other foreign timbers have now in a great meaſure ſuperſeded it, eſpecially in the latter article. This timber will do very well for uprights, but is rather too brittle for joiſts, rafters, &c. and, when properly poliſhed, it looks very well in chairs, tables, bureaus, &c. It is, at preſent, a good deal uſed for gunſtocks. Walnuts thrive beſt in a deep rich ſoil, but will do very well in a chalky ſoil, as may be ſeen on the hills in Surry, in the neighbourhood of Leatherhead, Godſtone, and Carſhalton; and, at Beddington-Park, the ſeat of the antient family of the Carews, there are many fine old Walnut-trees. Theſe trees are well worth cultivating; as the yearly value of the fruit that they bear is very conſiderable *. There is a great deal of money made, in plentiful years, by thinning of the nuts for pickling, both for home conſumption, and alſo for exportation. The leaves of Walnuts ſteeped in boiling water, and that infuſion mixed with lime-water, ſoap-ſuds, and urine, is found very efficacious for deſtroying ſlugs and worms in the ground, and inſects on trees.

Walnuts for keeping ſhould be ſuffered to drop of themſelves, and afterwards laid in an open airy place till they are thoroughly dried; then pack them in jars, boxes, or caſks, with fine clean ſand, that has been well dried in the ſun, in an oven, or before the fire, in layers of ſand and walnuts alternately; ſet them in a dry place, but not where it is too hot. In this manner I have kept them good till the latter end of April. Before you ſend them to table, wipe the ſand clean off; and, if you find that

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* At Beddington, about 50 Walnut-trees (and not above half of that number full bearers) have been let at 30 l. 40 l. and 50 l. according to the crop; and it is ſuppoſed, that in a good ſeaſon the renter clears 50 l. by the bargain.

Beddington was noted in Queen Elizabeth's time for the fineſt Orangery in England.

they have become ſhrivelled, ſteep them in milk and water for ſix or eight hours before they are uſed; this will make them plump and fine, and cauſe them to peel eaſily.

CHAPTER XXII.

OF GRAFTING AND BUDDING.

Four different Ways of Grafting, with Observations—On using the Composition, instead of Grafting-clay—Of Budding, with Observations, &c.

GRAFTING is the taking of a ſhoot from one tree, and inſerting it into another, in ſuch a manner as that both may unite cloſely and become one tree; this is called, by the antient writers in huſbandry and gardening, *inciſion*, to diſtinguiſh it from inoculating, or budding, which they call *inſerere oculos.*

I have taken a great deal of pains to trace the practice of grafting to its origin; but without ſucceſs, as no author that I have peruſed gives any ſatisfactory account of it; it is, however, allowed by all to be very antient.

The uſe of grafting is, to propagate any curious ſorts of fruits ſo as to be certain of the kinds; which cannot be done by any other method;

method: for, as all the good fruits have been accidentally obtained from ſeeds, ſo of the ſeeds of theſe, when ſown, many will degenerate, and produce ſuch fruit as is not worth the cultivating; but when ſhoots are taken from ſuch trees as produce good fruit, theſe will never alter from their kind, whatever be the ſtock or tree on which they are grafted.

The principle or philoſophy of grafting is ſomewhat obſcure; and, had not accident given the firſt hint, all our knowledge of Nature would never have led us to it. The effect is ordinarily attributed to the diverſity of the pores or ducts of the graft from thoſe of the ſtock, which change the figure of the particles of the juices in paſſing through them to the reſt of the tree.

Mr. Bradley, on occaſion of ſome obſervations by Agricola, ſuggeſts ſomething new on this head. The ſtock grafted on, he thinks, is only to be conſidered as a fund of vegetable matter which is to be filtered through the cion; and digeſted, and brought to maturity, as the time of growth in the veſſels of the cion directs. A cion, therefore, of one kind grafted on a tree of another, may be rather ſaid to take root in the tree that it is grafted in, than to unite itſelf with it; for it is viſible, that the cion preſerves its natural purity and intent, though it be fed and nouriſhed by a mere crab; which is, without doubt, occaſioned by the difference of the veſſels in the cion from thoſe of the ſtock; ſo that grafting may be juſtly compared to planting.

In proſecution of this view of that ingenious author, we add, that the natural juices of the earth, by the ſecretion and comminution in paſſing through the roots, &c. before they arrive at the cion, muſt doubtleſs arrive there half elaborated and concocted, and ſo diſpoſed for a more eaſy, plentiful, and perfect aſſimilation and nutrition; whence the cion muſt neceſſarily grow and thrive better and faſter than if it were put immediately in the ground, there to live on coarſer diet and harder of digeſtion; and the fruit produced by this further preparation in the cion muſt be finer, and further exalted, than if fed immediately from the more imperfectly prepared and altered juices of the ſtock. It may, perhaps, be thought unneceſſary to ſay any thing here on grafting, as it has been ſo fully treated of by Mr. Miller, and other writers on gardening; but, as this Treatiſe is principally on pruning and training, grafting ſeems naturally connected with it.

I perſuade myſelf, therefore, that a few inſtructions in grafting will not be unacceptable, as they may ſave the reader the trouble of turning to other books; eſpecially as they are more particularly intended for the grafting of old trees, and ſuch as are found, when they come to bear, to be a different ſort from what was expected: for, although nurſerymen in general are very careful in theſe matters, yet, through the inattention of their men, or ſome miſtake, or by an improper choice of the ſorts, it will frequently happen, that, after waiting thirteen or fourteen years, when the trees come to bear, the fruit is found of a bad quality, and not fit for uſe; ſo that new grafting or budding is abſolutely neceſſary.

I ſhall, therefore, give what directions may be neceſſary on that ſubject, to render it plain and eaſy to thoſe who have not been regularly inſtructed in the art of grafting from general practice; and add a method which I have followed for ſome years, and which I flatter myſelf will be found an improvement.

The ſhoots uſed in grafting are called cions, or grafts: and in the choice of theſe the following directions ſhould be carefully obſerved. 1ſt. That they are ſhoots of the former year; for when they are older they never ſucceed well. 2dly. Always to take them from healthy fruitful trees; for, if the trees from which they are taken be ſickly, the grafts very often partake ſo much of the diſtemper as rarely to get the better of it, at leaſt for ſome years; and when they are taken from young luxuriant trees, whoſe veſſels are generally large, they will continue to produce luxuriant ſhoots, but are ſeldom ſo productive as thoſe which are taken from fruitful trees whoſe ſhoots are more compact, and the joints cloſer together; at leaſt it will be a great number of years before the luxuriant grafts begin to produce fruit, even if managed with the greateſt ſkill. 3dly. You ſhould prefer thoſe grafts which are taken from the lateral or horizontal branches, to thoſe from the ſtrong perpendicular ſhoots, for the reaſons before given.

Theſe grafts, or cions, ſhould be cut off from the trees before their buds begin to ſwell, which is generally three weeks or a month before the ſeaſon for grafting; therefore, when they are cut off they ſhould be laid in the ground with the cut downwards, burying them half their length, and covering their tops with dry litter, to prevent their drying; if a ſmall joint of the former year's wood be cut off with the cion, it will preſerve it the better, and when they are grafted this may be cut off; for at the ſame time the cions muſt be cut to a proper length before they are inſerted in the ſtocks; but, till then, the ſhoots ſhould remain of their full length, as they were taken from the tree, which will better preſerve them from ſhrinking; if theſe cions are to be carried to a conſiderable diſtance, it will be proper to put their ends into a lump of clay, and to wrap them up in moſs, which will preſerve them freſh for a month, or longer; but theſe ſhould be cut off from the trees earlier than thoſe which are to be grafted near the place where the trees are growing.

Having given directions for the cions and grafts, we next come to that of the ſtock, which is a term applied to the trees intended for grafting; theſe are, either ſuch old trees as are already growing in the places where they are to remain, whoſe fruit is intended to be changed; or young trees, which have been raiſed in the nurſery for a ſupply to the garden; in the former caſe, there is no other choice, than that of the branches, which ſhould be ſuch as are young, healthy, well ſituated, and have a ſmooth bark; if theſe trees are growing againſt walls, or eſpaliers, it will be proper to graft ſix, eight, or ten branches, according to the ſize of the trees, by which they will be much ſooner furniſhed with branches again, than when a leſs number of cions are put in; but in ſtandard trees, four, or at moſt ſix, cions will be ſufficient.

In the choice of young ſtocks for grafting, you ſhould always prefer ſuch as have been raiſed from the ſeed, and that have been once or twice tranſplanted.

Next to theſe, are thoſe ſtocks which have been raiſed from cuttings, or layers; but thoſe which are ſuckers from the roots of other trees ſhould always be rejected; for theſe are never ſo well rooted as the others, and conſtantly put out a great number of ſuckers from their roots, whereby the borders and walks of the garden will be always peſtered during the Summer ſeaſon; theſe are not only unſightly, but they alſo take off part of the nouriſhment from the trees.

If theſe ſtocks have been allowed a proper diſtance in the nurſery where they have grown, the wood will be better ripened and more compact, than thoſe which have grown cloſe, and have been there drawn up to a greater height; the wood of theſe will be ſoft, and their veſſels large; ſo that the cions grafted into them will ſhoot very ſtrong; but they will be leſs diſpoſed to produce fruit than the other; and when trees acquire an ill habit at firſt it will be very difficult to reclaim them afterward.

Having directed the choice of cions and ſtocks, we come next to the operation; in order to which you muſt be provided with the following tools:

1. A neat ſmall hand-ſaw, for cutting off the heads of large ſtocks.

2. A good ſtrong knife, with a thick back, to make clefts in the ſtocks.

3. A ſharp pen-knife, or budding-knife, to cut the grafts.

4. A grafting chiſel and a ſmall mallet.

5. Baſs ſtrings, or woollen yarn, to tie the grafts with; and ſuch other inſtruments and materials as you ſhould find neceſſary, according to the ſort of grafting which you are to perform.

6. A quantity of clay, which ſhould be prepared a month before it is uſed, and kept turned and mixed, like mortar, every other day: this is to be made in the following manner.

Get a quantity of ſtrong fat loam (in proportion to the quantity of trees intended to be grafted); then take ſome new ſtone-horſe dung, and break it in among the loam; and if you cut a little ſtraw, or hay, very ſmall, and mix amongſt it, the loam will hold together the better; and if there be a quantity of ſalt added, it will prevent the clay from dividing in dry weather; theſe muſt be well ſtirred together, putting water to them after the manner of making mortar; it ſhould be hollowed like a diſh, filled with water, and kept every other day ſtirred; but it ought to be remembered, that it ſhould not be expoſed to the froſt, or drying winds; and the oftener it is ſtirred and wrought the better.

Of late years, ſome perſons have made uſe of another Compoſition for grafting, which they have found to anſwer the intention of keeping out the air better than the clay before deſcribed. This is compoſed of turpentine, bees-wax, and roſin, melted together; which, when of a proper conſiſtence, may be put on the ſtock round the graft, in the ſame manner as the clay is uſually applied; and, though it be not above a quarter of an inch thick, it will keep out the air more effectually than the clay; and, as cold will harden this, there is no danger of its being hurt by froſt, which is very apt to cauſe the clay to cleave, and ſometimes to fall off; and, when the heat of the ſummer comes on, this mixture will melt, and fall off without any trouble. In the uſing of this, there ſhould be a tin or copper pot, with conveniency under it to keep a very gentle fire with ſmall-coal; otherwiſe the cold will ſoon condenſe the mixture: but you muſt be careful not to apply it too hot, leſt you injure the graft. A perſon who is a little accuſtomed to this Compoſition will apply it very faſt; and it is much eaſier for him to work with than clay, eſpecially if the ſeaſon ſhould prove cold.

There are ſeveral ways of grafting, but four principal ones; [*See* PLATE XI.]

1. Grafting in the rind, called alſo ſhoulder-grafting; which is only proper for large trees: this is ealled crown-grafting, becauſe the grafts are ſet in form of a circle, or crown; and it is generally performed about the latter end of March, or the beginning of April.

2. Cleft-grafting, which is alſo called ſtock, or ſlit-grafting; this is proper for trees or ſtocks of a leſſer ſize, from an inch to two inches, or more, diameter: this grafting is to be performed in the months of February and March, and ſupplies the failure of the eſcutcheon way, which is practiſed in June, July, and Auguſt.

3. Whip-grafting, which is alſo called tongue-grafting: this is proper for ſmall ſtocks of an inch, half an inch, or leſs, diameter; it is the moſt effectual way of any, and is moſt in uſe.

4. Grafting by approach, or ablactation: this is practiſed when the ſtock that you would graft on, and the tree from which you take your graft, ſtand ſo near together, that they may be joined; and ſhould be performed in the month of April. This method, which is alſo called inarching, is chiefly uſed for Jaſmines, Oranges, and other tender exotic trees.

We come next to the manner of performing the ſeveral methods of grafting.

The firſt, which is termed rind, or ſhoulder-grafting, is ſeldom practiſed but on large trees, where either the head or the large branches are cut off horizontally, and two or more cions put in, according to the ſize of the branch, or ſtem; in doing this, the cions are cut flat on one ſide, with a ſhoulder to reſt upon the crown of the ſtock; then the rind of the ſtock muſt be raiſed up, to admit the cion between the wood and the bark of the ſtock, which muſt be inſerted about two inches, ſo as that the ſhoulder of the cion may meet, and cloſely join the crown of the ſtock; and after the number of cions is inſerted, the whole crown of the ſtock ſhould be well clayed over, leaving two eyes of the cions uncovered therewith, which will be ſufficient for ſhooting. This method of grafting was much more in practice formerly than it is at preſent;

and the diſcontinuance of it was cauſed by the ill ſucceſs with which it was attended; for, as theſe cions were placed between the rind of the ſtock and the wood, they were frequently blown out by ſtrong winds, after they had made large ſhoots, which has ſometimes happened after five or ſix years' growth; ſo that whenever this method is practiſed, there ſhould be ſome ſtakes faſtened to ſupport the cions until they have almoſt covered the ſtock.

The next method is termed cleft, or ſtock-grafting; this is practiſed upon ſtocks, or trees, of a ſmaller ſize, and may be uſed with ſucceſs where the rind of the ſtock is not too thick, whereby the inner bark of the cion will be prevented from joining to that of the ſtock. This may be performed on ſtocks, or branches, that are more than one inch diameter: the head of the ſtock, or branch, muſt be cut off with a ſlope, and a ſlit made the contrary way, in the top of the ſlope, deep enough to receive the cion, which ſhould be cut ſloping like a wedge, ſo as to fit the ſlit made in the ſtock; being careful to leave that ſide of the wedge which is to be placed outward much thicker than the other: and in putting the cion into the ſlit of the ſtock, there muſt be great care taken to join the rind of the cion to that of the ſtock; for if theſe do not unite, the grafts will not ſucceed; when this method of grafting is uſed to ſtocks that are not ſtrong, it will be proper to make a ligature of baſs, to prevent the ſlit of the ſtock from opening; then the whole ſhould be clayed over, to prevent the air from penetrating the ſlit, ſo as to deſtroy the grafts, only leaving two eyes of the cions above the clay for ſhooting.

The third method is termed whip, or tongue-grafting, which is the moſt commonly practiſed of any by the nursery-men near London, eſpecially for ſmall ſtocks, becauſe the cions much ſooner cover the ſtocks in this method than in any other.

This is performed by cutting off the head of the ſtocks ſloping; then there muſt be a notch made in the ſlope toward the upper part downward, a little more than half an inch deep, to receive the cion, which muſt be cut with a ſlope upward, and a ſlit made in this ſlope like a tongue, which tongue muſt be inſerted into the ſlit made in the ſlope of the ſtock, and the cion muſt be placed on one ſide of the ſtock, ſo as that the two rinds of both cion and ſtock may be equal and join together exactly; then there ſhould be a ligature of baſs to faſten the cion, ſo as that it may not be eaſily diſplaced,

and

and afterwards clay it over as in the former methods.

The fourth ſort of grafting is termed, inarching, grafting by approach, or ablactation. This is only to be performed when the ſtocks that are deſigned to be grafted, and the tree from which the graft is to be taken, ſtand ſo near together, as that their branches may be united. It is commonly practiſed on tender exotic plants, and ſome other ſorts which do not ſucceed in any of the other methods.

In performing this operation, a part of the ſtock, or branch, muſt be ſlit off about two inches in length, obſerving always to make choice of a ſmooth part of the ſtock; then a ſmall notch ſhould be made in this ſlit of the ſtock downward, in the ſame manner as hath been directed for whip-grafting; the branch of the tree deſigned to be inarched ſhould have a part ſlit off in like manner as the ſtock, and a ſlit made upward in this ſo as to leave a tongue, which tongue ſhould be inſerted into the ſlit of the ſtock; obſerving to join their rinds equally, that they may unite well together; then make a ligature of baſs, to keep them exactly in their ſituation, and afterwards clay this part of the ſtock over well, to keep out the air; in this method of grafting, the cion is not ſeparated from the tree until it is firmly united with the ſtock, nor is the head of the ſtock, or branch, which is grafted, cut off till this time, and only half the wood pared off with a ſlope, about three inches in length, and the ſame of the cion, or graft.

This method of grafting is not performed ſo early in the ſeaſon as the others; it being done in the month of April, when the ſap is flowing, at which time the cion and ſtock will join together, and unite much ſooner than at any other ſeaſon.

The Walnut, Fig, and Mulberry, will take by this method of grafting, but neither of theſe will ſucceed in any of the other methods; there are alſo ſeveral ſorts of evergreens that may be propagated by this method of grafting; but all the trees that are grafted in this way are weaker, and never grow to the ſize of thoſe which are grafted in the other methods; therefore this is rarely practiſed, but on ſuch ſorts of trees as will not take by the other methods.

Obſervations on Grafting.

In a long continuance of dry weather the grafts very frequently fail of taking; ſometimes, no doubt, owing to the improper choice of the grafts, as well as to the dry weather. Great care ſhould always be taken not to graft with weak ſhoots, particularly thoſe taken from near the top. Always take your grafts from the lower end of the ſhoots, and obſerve that the wood is plump and freſh ; for ſuch as are ſhriveled ſeldom or never take. Where any have miſſed in the Spring, I would adviſe to cut off, about the middle or latter end of June, ſome fine healthy grafts of the ſort that you wiſh to graft with, open the bark in the ſame manner as you do for budding (of which hereafter), and inſert the graft with a piece of the former year's wood on it ; after you have done this, rub in, with a bruſh, ſome of the Compoſition in a liquid ſtate ; then wrap your baſs round it, as is done for Spring grafting, leaving about three eyes on the ſhoot, which ſhould be tied on with the baſs as tight as you can ; then cover the outſide of the baſs, thus tied up, with the Compoſition to the thickneſs of about one-eighth of an inch, obſerving alſo to cover the end of the ſhoot with the ſame, to exclude the air and wet. In about three weeks, or a month, look over the grafts to ſee if they have taken. When the graft begins to ſwell, it will throw off the Compoſition : when that is the caſe, always remember to apply more, to prevent the air from penetrating the inciſion.

In the month of September, you ſhould examine whether the wounds are all healed up, and the two barks perfectly united; if they are, you may ſlacken the baſs; and if they are perfectly healed up, it may be taken off: but if not, the baſs muſt again be tied on, and covered with the Compoſition as before directed; letting it remain till the following Spring. You may then take the baſs off; and, if you find that the two barks have ſeparated during the Winter, with the point of a ſharp knife, cut out all the brown part of the bark (which, if left, would infallibly bring on the canker), and rub the Compoſition into the wound. If your grafts have produced ſtrong leading ſhoots, the tops of them ſhould be pinched off with the finger and thumb; but if they have not ſhot ſtrong, they ſhould not be cut till the Spring, when they ſhould be cut to three or four eyes, according to their ſtrength, to make them produce horizontal ſhoots, and form handſome heads. This grafting ſhould always be performed in moiſt or cloudy weather.

I have already, in the Chapter on APPLE-TREES, mentioned the advantages to be derived from uſing the Compoſition inſtead of grafting-clay, and alſo given ſome directions for the ſame. Rubbing a little of it into the inciſion will effectually prevent the canker, and in applying it round the graft a much leſs quantity will be ſufficient than of the clay; as it need not be more than three inches round in grafting ſmall ſtems or ſhoots, and ſo in proportion for thoſe which are larger. The Compoſition will keep the cion moiſt, and will not crack and fall off in dry weather as clay does. The Compoſition to be uſed in grafting ſhould be of ſuch a conſiſtence as to work eaſily with the hand, or a knife, or ſmall trowel, rather ſofter than grafting-clay generally is. Any perſon, who gives this method a fair trial, will find it to be a ſure, neat, and expeditious way of grafting.

Grafting, or budding, ſhould be performed as near to the upper ſide of a bud as poſſible. The moſt proper place for inſerting the cion, or bud, is at the joint a little above the croſs ſhoot.

Inoculation, or Budding.

This is commonly practiſed upon all ſorts of ſtone-fruit in particular; ſuch as Peaches, Nectarines, Cherries, Plums, &c. as alſo Oranges and Jaſmines; and is preferable to any ſort of grafting for moſt kinds of fruit. The method of performing it is as follows: you muſt be provided with a ſharp pen-knife, or what is commonly called a budding-knife, having a flat haft (the uſe of which is, to raiſe the bark of the ſtock to admit the bud), and ſome ſound baſs mat, which ſhould be ſoaked in water to increaſe its ſtrength, and make it more pliable; then, having taken off cuttings from the trees that you would propagate, you ſhould chooſe a ſmooth part of the ſtock, about five or ſix inches above the ſurface of the ground, if deſigned for dwarfs, and for half-ſtandards at three feet; but, for ſtandards, they ſhould be budded ſix or more feet above the ground; then with your knife make an horizontal cut acroſs the rind of the ſtock, and from the middle of that cut make a ſlit downwards about two inches in length; ſo that it may be in the form of a T: but you muſt be careful not to cut too deep, leſt you wound the ſtock: then, having cut off the leaf from the bud, leaving the footſtalk remaining, you ſhould make a croſs cut about half an inch below the eye, and with your knife ſlit off the bud with part of the wood to it, in form of an eſcutcheon: this done, you muſt with your knife pull off that part of the wood which was taken with the bud, obſerving whether the eye of the bud be left to it or not (for all thoſe buds which loſe their eyes in ſtripping ſhould be thrown away, being good for nothing); then having gently raiſed the bark of the ſtock where the croſs inciſion was made, with the flat haft or handle of your knife clear of the wood, you ſhould thruſt the bud therein, obſerving to place it ſmooth between the rind and the wood of the ſtock, cutting off any part of the rind belonging to the bud which may be too long for the ſlit made in the ſtock; and, having thus exactly fitted the bud to the ſtock, you muſt tie them cloſely round with baſs mat, beginning at the under part of the ſlit, and ſo proceed to the top; taking care that you do not bind round the eye of the bud, which ſhould be left open.

When your buds have been inoculated three weeks or a month, you will ſee which of them have taken; thoſe which appear ſhriveled and black are dead; but thoſe which remain freſh and plump, you may be ſure are joined; and at this time you ſhould looſen the bandage, which, if not done in time, will pinch the ſtock, and greatly injure, if not deſtroy, the bud.

In the March following you muſt cut off the ſtock about three inches above the bud; ſloping

ing it, that the wet may paſs off, and not enter the ſtock: to this part of the ſtock left above the bud, it is very proper to faſten the ſhoot which proceeds from the bud, and which would be in danger of being blown out, if not prevented; but this muſt continue no longer than one year, after which it muſt be cut off cloſe above the bud, that the ſtock may be covered thereby.

The time for inoculating is, from the middle of June until the middle of Auguſt, according to the forwardneſs of the ſeaſon, and the particular ſorts of trees to be propagated; but the time may be eaſily known, by trying the buds, whether they will come off well from the wood or not. However, the moſt general rule is, when you obſerve the buds formed at the extremity of the ſame year's ſhoots, which is a ſign of their having finiſhed their Spring growth.

The firſt ſort commonly inoculated is the Apricot, and the laſt the Orange-tree, which ſhould never be done until the middle of Auguſt; and in doing of this work, you ſhould always make choice of cloudy weather; for if it be done in the middle of the day, in very hot weather, the ſhoots will perſpire ſo faſt as to leave the buds deſtitute of moiſture; nor ſhould you take off the cuttings from the trees long before they are uſed; but if you are obliged to fetch your cuttings from ſome diſtance, as it often happens, cut off the leaves, but let all the footſtalks remain, then wrap the cuttings up in wet moſs and put them in a tin box (carrying them in a tin caſe with water being now diſuſed) to exclude the air; in this manner you may carry them to any reaſonable diſtance in good condition for inoculating.

It is a very improper practice of many perſons, to throw their cuttings into water; for this ſo ſaturates the buds with moiſture, that they have no attractive force left to imbibe the ſap of the ſtock; for want of which they very often miſcarry.

But before I quit this ſubject, I beg leave to obſerve, that, though it is the ordinary practice to diveſt the bud of that part of the wood which was taken from the ſhoot with it; yet, in many ſorts of tender trees, it is beſt to preſerve a little wood to the bud, without which they often fail. The not obſerving this has occaſioned ſome people to imagine, that certain ſorts of trees are not to be propagated by inoculation; whereas, if they had performed it in this method, they might have ſucceeded, as I have ſeveral times experienced.

The next thing neceſſary to be known by thoſe who would practiſe this art is, what trees will take and thrive, by being grafted, or inoculated, upon each other; and here there have been no ſure directions given by any of the writers on this ſubject; for there will be found great miſtakes in all their books, in relation to the matter; but, as it would extend this article too far, if all the ſorts of trees were to be here enumerated which will take upon each other by grafting or budding, I ſhall only give ſuch general directions as, if attended to, will be ſufficient ſo to inſtruct perſons, as that they may ſucceed.

All ſuch trees as are of the ſame genus, *i. e.* which agree in their flower and fruit, will take upon each other: for inſtance, all the Nut-bearing trees may be ſafely grafted on each other, as may alſo all the Plum-bearing trees, under which head I reckon not only the ſeveral ſorts of Plums, but alſo the Almond, Peach, Nectarine, Apricot, &c. which agree exactly in their general characters, by which they are diſtinguiſhed from all other trees; but, as many of theſe are very ſubject to emit large quantities of gum from the parts of the trees which are deeply cut and wounded; in the tender trees of this kind, viz. Peaches and Nectarines, which are moſt ſubject to this, it is found to be the ſureſt method to bud or inoculate theſe ſorts of fruits.

All ſuch trees as bear cones will do well upon each other, though they may differ in one being ever-green, and the other ſhedding its leaves in Winter; as is obſervable in the Cedar of Libanus, and the Larch-tree, which are found to ſucceed upon each other very well; but theſe muſt be grafted by approach; for they abound with a great quantity of reſin which is apt to evaporate from the graft if ſeparated from the tree before it is joined with the ſtock, whereby they are often deſtroyed; as alſo the Laurel on the Cherry, or the Cherry on the Laurel. All the maſt-bearing trees will alſo take upon each other, and thoſe which have a tender ſoft wood will do well if grafted in the common way; but thoſe that are of a more firm contexture, and are ſlow growers, ſhould be grafted by approach.

By ſtrictly obſerving this rule, we ſhall ſeldom miſcarry, provided the operation be rightly performed, and at a proper ſeaſon, unleſs the weather ſhould prove very bad, as it ſometimes happens, whereby whole quarters of fruit-trees miſcarry; and it is by this method that many kinds of exotic trees are not only propagated, but alſo rendered hardy enough to endure the cold of our climate in the open air; for, being grafted upon ſtocks of the ſame ſort which are hardy, the grafts are rendered more capable of enduring the cold, as hath been experienced by moſt of our valuable fruits now in England, which were formerly tranſplanted hither from more ſoutherly climates, and were at firſt too impatient of our cold to ſucceed well abroad; but have been, by budding or grafting upon more hardy trees, rendered capable of reſiſting our ſevereſt cold.

Theſe different graftings ſeem to have been greatly in uſe among the Antients, though they were certainly miſtaken in the ſeveral ſorts of fruits which they mention as having ſucceeded upon each other; as the Fig upon the Mulberry, the Plum upon the Cheſnut, with many others of the like kind; moſt of which have been tried by Mr. Miller, and found not to ſucceed; therefore what has been advanced on this head by the Antients is not founded on experience; or, at leaſt, they did not mean the ſame plants which at preſent are called by thoſe names; though I cannot help thinking that we are apt to pay too much deference to the writings of the Antients, in ſuppoſing them ſeldom to be miſtaken, or to aſſert a falſehood;

whereas,

whereas, if their works are carefully examined, it will be found, that they have often copied from each other's writings without making experiments to prove the truth of their aſſertions; and it is well known, that the ranging of plants before Cæſalpinus's time (which is about 200 years ſince) was, by their outward appearance, or from the ſuppoſed virtues of them, a method that is now juſtly exploded; and it has been obſerved, from many repeated trials, that, however plants may reſemble each other in the ſhape and make of their leaves, manner of ſhooting, &c. unleſs they agree in their fruit, and their other diſtinctive characters, they will not grow upon each other, though performed with ever ſo much art.

Obſervations on Budding Pear-Trees on Walls.

When the Pear-trees which are grafted in the Spring have not taken, I would adviſe to cut them off, a little below the graft, at a joint or bud. The tree will then throw out a great number of healthy ſhoots: rub theſe all off, except ſo many as will be ſufficient to fill the wall; nailing thoſe up, to prevent the wind from breaking them.

About the latter end of July the ſhoots will be fit to bud, which ſhould be done about that time. I would recommend leaving a little of the wood on the inſide of the bud when inſerted into the ſtock, rubbing in the Compoſition, and tying on the baſs as before.

Laſt Spring I grafted ſome Summer Bon-chrêtiens with the Bergamot de Paſque (or Eaſter Bergamot), and Pear d'Auch, moſt of which failed. I then cut them off below the grafts, and in July following they had produced ſhoots from five to ſix feet long, which I budded in the latter end of that month with the before-mentioned ſorts, which all took. About the beginning of September I ordered a man to ſlacken the baſſes; which having left too looſe, the barks began to ſeparate. I then made him tighten them, letting them remain till the following Spring. About the beginning of April, when I ſaw the buds begin to ſhoot, I cut the ſhoots near to the buds, but finding many where the bark had not united, and ſome of the eyes apparently dead, I took a ſharp pen-knife and cut out all the decayed bark, rubbing in the Compoſition, in the liquid ſtate, till the hollow parts were filled up; I then ſmoothed it off, with the finger, even with the bark of the ſtock. I alſo rubbed ſome of the Compoſition over thoſe eyes that were in the worſt ſtate, being quite black; but with very little hope of recovery. To my great aſtoniſhment, many of thoſe which ſeemed perfectly dead, recovered, and, by the middle of July, had ſhoots from five to ſix feet long (many of the ſhoots which took well have fruit-buds formed for next year), and covered a ſpace of wall larger than a young tree would have done in eight years; all the cavities where I cut out the dead bark, and applied the Compoſition, were, in the courſe of the Summer, filled up with ſound wood, and the bark between the ſtocks and grafts perfectly united.

Three years ago I budded on ſome Brown Beurrés and Craſanes with Pear d'Auch, one of which now covers a wall ſixteen feet high, and fifteen feet long, and has more fruit on it this year than a maiden tree would have produced twenty years after planting.

I never recommend budding or grafting of old trees, except when you have bad ſorts, or more of any ſort than you want for a ſupply: in that caſe, I would recommend to bud or graft with Pear d'Auch, Colmars, and Winter Bon-chrêtiens, which keep much longer than Beurrés, Craſanes, &c.

It will be neceſſary to give ſome directions for ſtandards that have been grafted in the Spring, and have miſſed. In ſuch caſe, they ſhould be cut below the graft, as directed for wall-trees; and when ſo treated, they will throw out a great number of ſhoots, which ſhould by no means be too ſoon thinned, as in that caſe they will be liable to be broken by the wind. You may begin to take off the weakeſt ſhoots about the latter end of May, or beginning of June. About the middle of the latter month, they will have acquired conſiderable ſtrength; you may then thin them; leaving as many ſtrong regular ſhoots, and of thoſe neareſt the top of the ſtem, as will form a handſome head. If the ſtem be very ſtrong it will be neceſſary, perhaps, to leave more than you intend to bud, on purpoſe to receive the ſap, which will flow in great abundance from a large trunk, and, without this precaution, would be apt to burſt the ſhoots, if there be not a ſufficient number to receive it. I have often ſeen ſhoots as large as my arm burſt by a ſuperabundance of ſap. When that is likely to happen, the beſt thing you can do is, to ſcarify the ſhoots, and rub a little of the Compoſition into the wound.

CHAPTER XXIII.

OF A GARDEN.

Its Situation, Size, Soil, and Form—Of Watering, Draining, &c.

Of the Melon-ground.

A GARDEN, if poſſible, ſhould be on a gentle declivity towards the South, a little inclining to the Eaſt to receive the benefit of the morning ſun. If it be ſituated in a bottom, the wind will have the leſs effect upon it; but then damps and fogs will be very prejudicial to the fruit and other crops; and if ſituated too high, although it will in a great meaſure be free from damps and fogs, it will be expoſed to the fury of the winds, to the great hurt of the trees, by breaking their branches, and blowing down the bloſſoms and fruit. A garden ſhould be well ſheltered from the North and Eaſt, to prevent the blighting winds from affecting the trees; and alſo from the Weſterly winds, which are very hurtful to gardens in the Spring or Summer months. If a garden be not naturally ſheltered with gentle riſing hills, which are the beſt ſhelter of any, plantations of foreſt-trees made at proper diſtances, ſo as not to ſhade it, will be found the beſt ſubſtitute. At the ſame time there ought to be a free admittance for the ſun and air. On that account, a place ſurrounded by woods is a very improper ſituation for a garden or orchard, as a foul ſtagnant air is very unfavourable to vegetation; and it is alſo obſerved, that blights are much more frequent in ſuch ſituations than in thoſe that are more open and expoſed.

I have recommended the practice of intermixing fruit-trees in ſhrubberies and plantations of this kind to ſeveral gentlemen, who have adopted it with ſucceſs. While the fruit-trees are in flower, they are a great ornament to the ſhrubberies; and in Summer and Autumn the different colours of the fruit have a beautiful appearance. Add to this the advantage of a plentiful ſupply of fruit for the table, and for making Cider and Perry; and if ſome Cherries are interſperſed among them, they will be food for birds, and be the means of preventing

ing them from deſtroying your finer fruit in the orchard or garden.

About ſix years ago, my worthy friend Walter Urquhart, eſq. of Warley Park, near Waltham Abbey, planted a clump of fruit and foreſt trees, with flowering ſhrubs in front, next the houſe, to ſcreen his garden, which was ſo injudiciouſly ſituated as to preſent the walls to view from the houſe, and from almoſt every part of his beautiful park. The fruit-trees made choice of for this purpoſe were large ones of various kinds, which had been headed down, and were then full of fruit-buds. Theſe trees were planted at a proper diſtance from the garden, ſo as not to ſhade the walls, and the foreſt-trees interſperſed among them, according to the height that they would attain when full grown.

Mr. Urquhart has continued to take up ſome of the foreſt-trees from time to time, as the fruit-trees ſpread their branches and require more room. Thus, the clump has become a nurſery for foreſt-trees; a great deal of money is ſaved which would otherwiſe have been expended in the purchaſe and carriage of plants; and from it he has made ſome very fine new plantations. The fruit-trees make a handſome orchard, and at the ſame time cover the walls of the garden.

When the ſituation will not admit of ſuch plantations, I would adviſe planting ſome croſs-rows of fruit-trees in the garden, at the diſtance of forty or ſeventy yards from each other, more or leſs according to the ſize of the garden. In long rows, one row of trees will be ſufficient on each ſide of the walk; but in the ſhorter croſs rows, there ſhould be two rows on each ſide. The trees ſhould not be planted oppoſite to each other, but alternately; ſo as that thoſe of one row may be oppoſite to the open ſpaces of the other. Trees planted in this manner will have a good effect, and will alſo ſerve to break the force of high winds, and prevent a great deal of damage which might otherwiſe be done to the reſt of the trees throughout the garden. Thoſe which I would recommend for the above purpoſe are dwarfs, with ſtems about two feet high, which can eaſily be obtained by cutting off the lower branches.

In laying out a new garden, another very eſſential point is, to make choice of a good ſoil. It ſhould be two or three feet deep; but if deeper the better; of a mellow pliable nature, and of a moderately dry quality; and if the ground ſhould have an uneven ſurface, I would by no means attempt to level it; for by that unevenneſs, and any little difference there may be in the quality, you will have a greater variety of ſoil adapted to different crops. The beſt ſoil for a garden is, a rich mellow loam; and the worſt, a ſtiff heavy clay. A light ſand is alſo a very unfit ſoil for a garden.

Sea-coal aſhes, or the cleaning of ſtreets and ditches, will be found very proper to mix with a ſtrong ſoil; and if the ground ſhould be cold, a large quantity of coal-aſhes, ſea-ſand, or rotten vegetables, ſhould be laid upon it, in order to meliorate and looſen the ſoil, and render it eaſy to work.

Lime rubbiſh, or light ſandy earth from fields and commons, will alſo be found of great ſervice to ſtiff clayey ground.

If the ſoil be light and warm, rotten neat's dung is the beſt dreſſing that you can give it. If horſe-dung be ever uſed, it muſt be completely rotted, otherwiſe it will burn up the crop the firſt hot weather.

With regard to the form of a garden, there are various opinions, and it ſometimes depends on the ſituation; but where you are at perfect liberty I would prefer a ſquare or oblong. As to the ſize, it may be from one acre to ſix or eight within the wall, according to the demand for vegetables in the family. It ſhould be walled round with a brick wall from ten to twelve feet high: but, if there be plenty of walling, which there may be when you are not ſtinted with reſpect to ground, I would prefer walls ten feet high, to thoſe that are higher, and I am convinced they will be found more convenient. The garden ſhould be ſurrounded with a border, or ſlip, from forty to ſixty feet wide or more, if the ground can be ſpared; and this again incloſed with an oak-paling from ſix to eight feet high, with a cheval-de-friſe * at top, to prevent the people's getting over: it will alſo ſtrengthen the paling.

By making ſlips on the outſide of the garden wall, you will have plenty of ground for Gooſe-

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* A very good cheval-de-friſe may be conſtructed as follows: take a piece of wood of a convenient length, about four inches broad, and one inch and a quarter thick, and plane the upper edge into the ſhape of the roof of a houſe of a low pitch; then draw a line on each ſide from end to end, about an inch and a quarter below the upper edge, and through theſe lines drive twelve-penny nails about four inches diſtant from each other, ſo as to come out near the upper edge on the oppoſite ſide. Each nail ſhould be oppoſite the middle of the ſpace between two nails on the other ſide. The nail-heads ſhould be ſunk in the wood, and ſmall ſtrips nailed over them: then drive in tenter-hooks between the nail-points, and nail the whole firmly on the outſide of the top of the paling. In this manner proceed till you have finiſhed the whole of the fence.

berries, Currants, Strawberries &c. You may allot that part of the ſlips which lies neareſt to the ſtables (if well ſheltered, and expoſed to the ſun,) for Melon and Cucumber beds; and you can plant both ſides of the garden-wall, which will give a great addition to the quantity of wall fruit.

If the ſoil of the new garden be ſtrong, it ſhould be plowed or dug three or four times before you plant any thing in it; and if it be thrown up in ridges during the winter, it will be of great ſervice, as the froſt will meliorate and looſen its parts.

Gardens, if poſſible, ſhould lie near a river, or brook, that they may be well ſupplied with water. From theſe, if the garden does not lie too high, the water may be conducted to it by drains, or, which is much better, by pipes, taking care to lay them low enough to receive the water in the drieſt ſeaſon, which is the time when it will be moſt wanted.

If there be no running water near the garden, and if the latter lies on a declivity near a public road, I would adviſe to make a hollow drain, or a cut, from the moſt convenient part of the road to receive the water that waſhes the road in rainy weather, and convey it to a large ciſtern, or tank, in the upper part of the garden; this, if the road be mended with lime-ſtone or chalk, will prove an excellent manure. The water from the ciſtern, or from the river, may be conducted to the different quarters by means of pipes, which having cocks at proper places, the water may be turned upon the different quarters of the garden at pleaſure. Or the water may be conveyed in proper channels, and turned on the quarters in the ſame manner as in watering meadows.

Theſe pipes, channels, &c. will be a conſiderable expence at firſt; but they will ſoon repay it by ſaving a great deal of time, which would otherwiſe be ſpent in pumping and carrying water. The moſt convenient time for turning the water on, is, in general, during the night; and in dry weather it would then be of the moſt eſſential ſervice.

If the ſituation be ſuch that you are obliged to pump the water from deep wells, there ſhould be a large reſervoir, in which it ſhould be expoſed to the ſun and air for ſome days before it is uſed: it may then be turned on as above.

If the ground be wet and ſpewy, it will be proper to make a baſin in the moſt convenient place, to receive the water that comes from the drains, and to collect the rain that falls on the walks.

In laying out the quarters, you muſt be guided in a great meaſure by the form and ſize of the garden; but do not lay them out too ſmall, as in that caſe a great part of the ground will be taken up with walks. The beſt figure is a ſquare or oblong, when the garden is of that form; but if not, they may be laid out in any other figure that is thought to be moſt convenient.

The middle walks ſhould be about ſeven feet, which is wide enough to admit a cart; and the others about three or four feet broad; with a border on each ſide, five or ſix feet wide, at leaſt, between the walk and the fruit-trees. Walks in kitchen-gardens are generally gravelled, and but ſeldom laid with turf, as the frequent wheeling and treading ſoon deſtroys the graſs and renders them very unſightly: but a binding ſand makes good walks and they are eaſily kept; for when moſs or weeds begin to grow, they may be cleaned with a horſe-hoe, or ſcuffeled over with a Dutch-hoe, in dry weather, and raked a day or two after, by which they will be made always to look neat and clean. I, however, give the preference to ſea-coal aſhes, which in my opinion make the beſt walks for a kitchen-garden, and they are eaſier kept then any other, being firm and dry, and cleaner to walk on than ſand, eſpecially after froſt.

The bottoms of the walks ſhould be filled up with brick rubbiſh, chippings of ſtones, or gravel and ſtones; thoſe raked off the quarters will do very well, and by uſing them you will ſave carriage.

If the ſoil be ſtiff and wet, or ſubject to detain the moiſture, there muſt be under-ground drains made to carry off the water. In this caſe, let the main drain be made under the walk, to receive and carry off the water from thoſe under the quarters. Draining, when the ſoil is wet, is abſolutely neceſſary; otherwiſe the trees will never produce good well-flavoured fruit, and your kitchen plants will be much injured: the drains alſo under the walks will keep them dry and firm, and make them fit for carting and wheeling on in wet weather.

The borders under the walls, in the inſide, ſhould be from ten to twenty feet wide, according to the ſize of the garden, to give full liberty to the roots of the trees to ſpread. There ſhould be a foot path about two feet and a half from the wall, for the greater convenience of nailing the trees, gathering the fruit, &c. This walk ſhould be from two to two feet and a half wide (to admit a barrow, or barrow engine for watering the trees), and covered with ſand, or, which is better, coal-aſhes*, about two or three inches thick; but without any gravel or rubbiſh below. On theſe borders you may have early or late crops, according to the aſpect; but by no means plant any deep-rooting plants, ſuch as cabbages, beans, peas, &c. (except early frame peas), which would be very hurtful to the trees.

The reaſon for alloting part of the outſide ſlip next the ſtable for hot-beds for raiſing Melons and Cucumbers, are, firſt, becauſe there will be no litter to carry-in within the walls to dirty the walks; ſecondly, the beds will not be ſeen from the garden; and laſtly, the convenience of carrying the dung, by which a great deal of time will be ſaved in carting and wheeling.

It will be neceſſary, eſpecially in expoſed ſituations, to encloſe the Melon-ground with either a wall or paling from ſix to eight feet high. It was formerly a practice to encloſe Melon-grounds with reed fences; but, although they are tolerably warm, and eaſily removed from one place to another (being made in ſeparate parcels), they are very apt to harbour vermin.

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* Slugs avoid coal-aſh walks, eſpecially when new-laid and rough; ſuch walks, therefore, may be of ſervice, as they will, in ſome degree, obſtruct the paſſage of ſlugs and ſnails from one quarter to another.

Melons are beſt worked in brick pits, coped with ſtone or oak, about twelve feet wide and two and a half deep: the length ſhould be according to the number of frames that you work. The ſize of the lights, for early Melons, ſhould be five feet long, and three broad; but for others they will require to be ſix feet long and four broad. The former ſhould be four and the latter three light boxes. For the pits, a nine-inch wall will be ſufficient; and if they are intended for a wood coping, the bricklayer muſt build in ſome pieces of timber to faſten it to: but where ſtone can be had at a reaſonable rate, I would give it the preference, as wood rots very ſoon.

There ſhould be a walk between the ridges, about ſix or ſeven feet broad, ſufficient to admit a cart to carry dung, which will be much more expeditious than wheeling. The walk ſhould be made up as high as the coping, and ſloping gently towards each end; the bottom ſhould be filled up and covered as before directed: this will be eaſily kept clean; ſo that, after your linings are made up, it may be kept as neat as if it were in a pleaſure-ground.

It will be neceſſary to make a looſe drain along the middle of the bottom of the pit, to convey away any wet, and the oozing from the dung, to a ciſtern, or tank, made on purpoſe to receive it.

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This moiſture, which is the ſtrength of the dung, may be uſed for watering Cabbage-plants, Cauliflowers, &c. or it may be thrown on the ground for manure. I have experienced it to be much better than dung.

When a garden is planted and finiſhed, it will be found very convenient to have a plan of it, with the name of each tree inſerted in its proper place. This I had done when the new ſlips were laid out in Kenſington-gardens about ten or eleven years ago, and have found it of great ſervice.

Walls of Kitchen-gardens ſhould be from ten to fourteen feet high; the foundation ſhould be two bricks or two bricks and a half thick; the offset ſhould not be above one courſe higher than the level of the border; and the wall ſhould than ſet off a brick and a half thick. If the walls are long, it will be neceſſary to ſtrengthen them with piers from forty to ſixty feet apart; and theſe piers ſhould not project above half a brick beyond the wall. I do not approve of fixed copings, eſpecially when they project ſo far as they are generally made to do; I would rather adviſe to have a moveable wooden coping, fixed on with iron hooks faſtened to pieces of wood built into the top of the wall: theſe copings would alſo be found very convenient to faſten the nettings, &c. to in Spring, for ſheltering

ing the fruit-trees. If however, any ſhould prefer fixed copings, they ſhould not project above an inch on each ſide of the wall; this ſmall projection will be ſufficient to preſerve the wall, and will not prevent the dew and rain from falling on the upper parts of the trees, which is of great ſervice to them. Some copings are made of bricks convex on the upper ſide; but I have lately ſeen a very good coping at Aſhted-Park, near Epſom: it is made of a ſort of Welch ſlate, to be had, of different ſizes, at Mr. Samuel Wyatt's ſlate-yard, Chriſtchurch, near Black-friar's Bridge. This is made to project about one inch, and anſwers exceedingly well. Flat copings ſhould have a little ſlope towards the North or Eaſt, according to the aſpect of the wall; this will carry the wet from the South and Weſt ſides, which otherwiſe would be apt to injure the early bloſſoms and fruit on the South and Weſt walls in cold nights.

When bricks can be had, I would adviſe never to build garden walls of ſtone; as it is by no means ſo favourable to the ripening of fruit as brick. When a kitchen-garden contains four acres, or upwards, it may be interſected by two or more croſs-walls, which will greatly augment the quantity of fruit, and alſo keep the garden warm and ſhelter it greatly from high winds.

CHAPTER XXIV.

THE ORCHARD.

Its Size, Situation, and Soil—Choice of Trees, preparing the Grouud, Planting, &c.—An annual Wash for Trees.

ORCHARDS are appropriated to the growth of ſtandard fruit-trees only, where a large ſupply of fruit is wanted; and generally conſiſt of Apple-trees, Pear-trees, Plum-trees, and Cherry-trees; but a complete orchard ſhould have, beſides, Quinces, Medlars, Mulberries, Service-trees, Filberts, Spaniſh Nuts, and Barberries; as alſo Walnuts and Cheſnuts; the two latter of which are well adapted for ſheltering the others from high winds, and ſhould therefore be planted in the boundaries of the orchard, a little cloſer than ordinary, for that purpoſe. In chooſing your trees, too much care cannot be taken to admit of none but ſuch as have good roots, fair clean ſtems, and proper heads. In ſelecting your Pears and Apples, eſpecially the latter, be careful to procure a proper aſſortment for the ſupply of your table during the whole year; a very few of the *Summer* ſorts will ſuffice; more of the *Autumn*, and ſtill more of the *Winter* will be required; as upon this laſt you muſt chiefly depend for ſupply from the month of January to July. See the *Method of preſerving Fruit*, in CHAPTER XXV.

In cyder-making counties, ſuch as Hereford, Worceſter, Glouceſter, Somerſet, and Devon, they have large orchards of Apples; and in ſome counties, (Kent in particular) there are orchards wholly of cherries. In general orchards, however, there ought to be a much larger proportion of Apples than of any other fruit. Orchards, in proper ſituations, are very profitable; beſide, the trees have a delightful appearance when in bloſſom, and alſo when the fruit is ripe.

What has been ſaid reſpecting the ſituation and ſoil of a garden is alſo applicable to an orchard. The ſituation of an orchard ſhould be rather elevated than low; on a gentle declivity; and open to the South and South Eaſt, to give free admiſſion to the air and rays of the ſun (to dry up the damps and diſperſe the fogs), which will render the trees healthy, and give a fine flavour to the fruit. An orchard ſhould alſo be well ſheltered from the Eaſt, North, and Weſterly winds, by plantations, if not naturally ſheltered by riſing grounds. Theſe plantations of foreſt-trees ſhould neither be too large nor too near the orchard; as they would in that caſe prevent a free circulation of the air, which would prove injurious to the fruit-trees. But, if the ground will not admit of ſuch plantations, I would adviſe planting croſs rows of fruit-trees, as directed for gardens. I would alſo recommend planting ſome of the largeſt growing trees neareſt the outſides expoſed to thoſe winds; two or three rows of which ſhould be planted cloſer than ordinary, which would greatly ſhelter thoſe in the interior parts of the orchard. Walnut and Cheſnut trees, as has been already obſerved, are well adapted for this purpoſe.

As to the ſize of an orchard, it may be from one to twenty acres, or more, according to the quantity of fruit wanted, or the quantity of ground that you may have fit for the purpoſe.

That ſoil which produces good crops of corn, graſs, or garden vegetables, will alſo do for an orchard; but a loamy ſoil is to be preferred; though any of a good quality, not too light or dry, nor wet, heavy, or ſtubborn, but of a moderately ſoft and pliant nature, will be found to anſwer the end. Shingly and gravelly ſoils diſagree very much with fruit-trees, unleſs there be loam intermixed *. They will ſucceed much better on a chalk bottom. On ſuch a ſoil, I have ſeen roots twelve feet deep, and trees thrive well. If the bottom be clay, the roots ſhould be cut-in once in four years, to prevent them from penetrating the clay, which would greatly injure the trees. The ſoil ſhould be from two to three feet deep; before planting the trees, it ſhould be trenched two ſpits deep, and ten feet broad where the rows are to be planted, and a ſpit below looſened, unleſs it be clay, which ſhould be trodden down. If it be paſture ground, it ſhould be ploughed, and well ſummer-fallowed, till the graſs be killed, otherwiſe when it is laid in the bottom in trenching, which it generally is, it will be

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* Where no better is to be had, the holes ſhould be dug at leaſt three feet deep, and filled up with good mould: if mixed up with rotten dung, rotten leaves, or other manure, the trees will in time amply repay the expence: the dung uſed for this purpoſe ſhould be that from the Melon and Cucumber beds, mixed with the mould from the ſame, when the beds are broken up in Autumn, or Winter; it ſhould be laid up in heaps, and continue ſo for one year at leaſt; but ſhould be frequently turned and have ſome good freſh mould mixed with it.

very apt to breed grubs, which will do much miſchief.

Some only dig holes large enough to receive the roots, eſpecially in graſs ground which is to be continued ſo. Others prepare the ground by deep ploughing, if the orchard is to be of great extent. The ſward, if paſture, ſhould be ploughed-in ſome time in Spring: give it a good ſummer-fallow, ploughing it two or three times, which will rot the turf. A fortnight or three weeks before planting, give the ground a good deep ploughing to prepare it for the reception of the trees. The beſt time for planting on a dry ſoil is in October; but, if wet, the latter end of February, or the month of March, will be a fitter ſeaſon.

In planting, endeavour to ſuit the trees as well as poſſible to the ſoil, and to plant them at proper diſtances from each other; which may be from forty to eighty feet, according to the ſize of the trees when full-grown. Fruit-trees, as has already been obſerved, when planted too thick, are very liable to blights, and to be covered with moſs, which robs the tree of a great part of its nouriſhment, beſides ſpoiling the flavour of the fruit. Procure your trees from a ſoil nearly ſimilar to, or rather worſe than that where you intend to plant them; for trees tranſplanted from a rich ſoil to a poorer never thrive well, but if from a poor to a richer ſoil, they will generally ſucceed.

If trees are planted in the quincunx order, and at the diſtance of eighty feet, the ground between the rows may be ploughed and ſown with Wheat, Turnips, &c. or planted with Potatoes. Ploughing or digging the ground, provided it be not done ſo deep as to hurt the roots, by admitting the ſun and rain to meliorate the ground, will keep the trees in a healthy flouriſhing ſtate. It will be neceſſary to ſupport the young trees by tying them to ſtakes until they are well rooted, to prevent their being looſened or blown down by the wind. The Spring after planting, if it prove dry, dig up ſome turf, and lay it round the ſtem of the young trees with the graſſy ſide downwards; this will keep the ground moiſt, and ſave a deal of watering: if the trees have taken well, this need not be repeated, as they will be out of danger the firſt year. The turf ſhould be laid as far as you think the roots of the trees extend; and when it is rotted, it ſhould be dug-in, which will be of great ſervice to them.

Trees that are of very different ſizes when full-grown ſhould not be planted promiſcuouſly;

but, if the ſoil be properly adapted, plant the larger in the back part or higher ground, or at the North-ends of the rows, if they run nearly North and South, and the others in ſucceſſion according to their ſize. Fruit-trees planted in this manner will have a fine effect when grown up; but if they are planted promiſcuouſly, they will not appear ſo agreeable to the eye; and, beſides, the ſmaller trees will be ſhaded by the larger, which will injure them, and ſpoil the flavour of the fruit.

Orchards ſhould be dunged once in two or three years. The ſtems of trees in thoſe where cattle feed ſhould be high enough to prevent their eating the lower branches; and fenced in ſuch a manner as to prevent their being barked, or injured, by the cattle rubbing againſt them, particularly when young; which may be done by triangles of wood, or the trees may be buſhed with thorns, &c. The trees are to be pruned and managed as already directed for Apples, Pears, Plums, &c. &c.

If the ſoil be wet, it muſt be drained, as already directed for a garden. When the ſurface of the ground is wet, and has a little deſcent, it may be formed into a kind of ridges, by making a furrow, from one foot to two deep, between every two rows, ſloping the ground regularly on each ſide, from a reaſonable diſtance to the bottom of the furrow. Theſe hollows will carry off the water, and render the ſurface dry and healthy. If paſture, the turf may be firſt pared off, and afterwards re-laid when the furrow is made.

In orchards, where cattle are not permitted to go, I would prefer dwarf-trees to ſtandards, taking care to proportion the diſtance of the rows to the ſize of the trees. But in orchards kept for paſture it will be neceſſary to plant ſtandards.

Burning of rotten wood, weeds, potatoe haulm, wet ſtraw, &c. on the windward ſide of the trees when they are in bloſſom, will be found a good preſervative from blights, caterpillars, &c.

I would recommend waſhing the trees annually, in the month of February or March, with the following mixture, which will deſtroy the eggs of inſects, and prevent moſs from growing on the trunks and branches: it will alſo help to nouriſh the tree, keeping the bark fine and healthy; and will have the ſame effect on it as a top dreſſing has upon graſs land.

Mix freſh cow-dung with urine and ſoap-ſuds, and with this mixture waſh over the ſtems and branches of the trees, as a whitewaſher would waſh the cieling or walls of a room; taking care to cut off all the cankery parts, and to ſcrape off all the moſs, before you lay the mixture on. In the courſe of the Spring or Summer, you will ſee a fine new bark coming on. When the old bark is cankery, you muſt pare it off with a draw-knife, or ſuch a long knife as I have had made on purpoſe, eſpecially for wall-trees, where the draw-knife cannot be applied, next the wall. The knives and other tools for dreſſing decayed trees will be deſcribed hereafter *. When you ſee it neceſſary to take all the outer bark off, you muſt cover the ſtem, &c. with the Compoſition and powder, patting it gently down, as in the caſe when large limbs are cut off.

If the above waſh be repeated in Autumn, after the fall of the leaf, it will deſtroy the eggs of a great many inſects that hatch in Autumn and Winter. This waſhing will be found of great ſervice to all kinds of fruit and foreſt trees whatever.

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* See Plate XIII.

CHAPTER XXV.

OF GATHERING APPLES AND PEARS.

The Time and Manner of Gathering them; and of the Management of the Fruit-room—Of Packing Fruit for Carriage.

AS Apples ſhaken or beaten down with a pole never keep in Winter, they ought all to be hand-picked by a perſon ſtanding on ſteps made on purpoſe.

The ſteps ſhould be light, for convenience of moving from one place to another; and ſo contrived, that the ladder may be diſengaged from the back at pleaſure; which may eaſily be done if they are faſtened together by a bolt at top. There ſhould be a broad ſtep at top to ſtand on, with room for the baſket which is to hold the fruit. When you begin to gather the fruit, you ſhould be provided with hand-baſkets of different ſizes, and alſo with large baſkets, or hampers, and wheel-barrows. You muſt lay ſome ſhort-graſs mowings, perfectly dry, (which you ought to provide for the purpoſe in Summer, and keep in a ſhed or any other dry place till wanted) at the bottoms of the large baſkets and hampers, to prevent the fruit from being bruiſed.

Obſerve attentively when the Apples and Pears are ripe; and do not pick them always at the ſame regular time of the year, as is the practice with many. A dry ſeaſon will forward the ripening of fruit, and a wet one retard it; ſo that there will ſometimes be a month or five weeks difference in the proper time of gathering. The method that I have practiſed is, to obſerve when the fruit begins to fall (I do not mean what we call wind-falls, or the falling of ſuch as are infeſted with the caterpillar, &c.), but ſound fruit; I then put my hand under it; and, if it comes off without any force being uſed, I take it for granted that the fruit is perfectly ripe; unleſs the tree be ſickly, which is eaſily known by the leaves or fruit being ſhriveled. If the foregoing obſervations are attended to, the fruit will keep well, and be plump; and not ſhriveled, as is the caſe with all fruit that is gathered before it is ripe.

The perſon on the ſteps ſhould pick the fruit carefully, and lay it gently into the baſket on the top of the ſteps; for if it be in the leaſt bruiſed it will not keep. For the ſame reaſon, great care muſt be taken in emptying the fruit out of the hand-baſkets, when full, into the large baſkets or hampers. If more than one large baſket be wheeled at once, which may generally be done, the lower ones muſt not be ſo full as to let the bottom of the upper one touch the fruit: it will alſo be neceſſary to put ſome of the ſoft dry graſs between the baſkets, and alſo over the fruit in the upper baſket.

When the fruit begins to fall of itſelf, cover the ground under the tree with ſome of the ſhort graſs mowings, or, if that cannot be procured, with ſome peaſe-haulm, or oat or barley ſtraw, quite dry: this will preſerve the fruit from bruiſing when it drops: the fruit which thus falls of itſelf ſhould be laid up ſeparate from, and uſed before that which is hand-picked, according to the ſeaſon in which they are fit to be ſent to table. Should any be bruiſed by falling on one another, they ſhould be thrown aſide, as only fit for baking, or to be given to the pigs.

When all the fruit is gathered in, rake off the ſhort graſs, &c. and throw it up to rot, or mix it with dung, or leaves of trees; for if it remain on the ground during the Winter it will harbour ſlugs.

When the bolt of the ſteps is taken out, and the ladder and back part ſeparated, the ladder will then be fit to uſe in gathering fruit off wall trees; only it will be neceſſary to ſcrew on the the upper part of it two pieces of iron, or nail two pieces of aſh or oak, about ſix or eight inches long, to keep it far enough from the wall to prevent the tree from ſuſtaining any damage in the bark or branches; which would infallibly bring on the canker.

When the fruit is carried to the fruit-room, lay ſome of the dry ſhort graſs on the floor in the area of the room; then take the fruit gently out of the baſkets, and lay it in heaps on the top of the graſs, keeping each ſort in a ſeparate heap; the heaps may be from two to three feet high, or according to the quantity of fruit that you have. When the heaps are completed, cover the tops at leaſt two inches thick with ſhort graſs, in order to ſweat them. Let them lie a fortnight, then open the heaps and turn them over, wiping each Apple or Pear with a dry woollen cloth, which ſhould be frequently dried during the proceſs, obſerving now to lay in the middle the fruit which before was at the top. Let the heaps now remain eight or ten days, covered as before; by that time they will have thrown out the watery crudities which they may have imbibed during a wet ſeaſon; then uncover the heaps, and wipe the fruit carefully one by one, as before, picking out every one that is injured, or has the leaſt ſpot, as unfit for keeping.

Fruit ſhould be gathered, if poſſible, in dry weather, and when the dew is exhaled from off the trees; and remember never to gather in the evening after the dew begins to fall.

During the time that the fruit is ſweating, the windows ſhould be left open, except in wet and foggy weather, to admit the air to carry off the moiſture which perſpires from the fruit. The perſpiration will ſometimes be ſo great, that on putting your hand into the heap, it will come out as wet as if it had been dipped into a pail of water: when in this ſtate, it will be neceſſary to turn and wipe the fruit.

In laying-up fruit, the common practice has been to lay it on clean wheat-ſtraw; but I find by experience, that when any of the fruit begins to decay, if it be not immediately picked out, the ſtraw, by imbibing the moiſture from the decayed fruit, will become tainted, and communicate a diſagreeable taſte to the ſound fruit.

I would likewiſe caution thoſe who erect new ſhelves in their fruit-rooms, to have the timber well ſeaſoned, and to make uſe of white deal in preference to red, as the latter, eſpecially if not very well ſeaſoned, is apt to give a very diſagreeable reſinous taſte to the fruit, which quite ſpoils its flavour. I would, therefore, recommend covering the bottoms of the ſhelves with thin coarſe canvas (ſuch as may be purchaſed for about eight or ten pence a yard), on which the fruit ſhould be laid in a ſingle layer, after being wiped perfectly dry; but by no means lay them atop of one another. When that is done, cover them with a piece of the ſame canvas, or thin flannel, or with old newspapers, or whitiſh brown paper, which will in a great meaſure exclude the air, prevent the froſt from injuring the fruit, and preſerve a beautiful ſmoothneſs on its ſkin. The fruit ſhould be turned two or three times during the Winter; as delicate and tender fruit, by lying long without turning, is apt to rot on the underſide, even if perfectly ſound when laid-up. Be particularly careful, however, to pick out all the damaged fruit.

When the fruit is laid-in, put the earlieſt ſorts on the lower ſhelves, or in the lower drawers, according to their time of coming in, beginning with the Nonſuch, Golden Rennet, and Jenneting Apples, and Bergamot and Beurré Pears (for I find by experience, that the Jargonelle keeps beſt on the tree, as, if gathered, it rots almoſt immediately); thus, by proper management, you may have a conſtant ſucceſſion of fruit from one ſeaſon to the other.

When there are large quantities of fruit, it will require a great deal of time to lay it on the ſhelves, &c.: this buſineſs may therefore be done in wet weather, or in the evenings, when you cannot conveniently ſpare your men from the outdoor-work in the day-time.

Thoſe who keep their fruit in ſtorehouſes, for the ſupply of the London and other markets, as well as thoſe who have not proper fruit-rooms, may keep their Apples and Pears in baſkets or hampers; putting ſome ſoft paper in the bottoms and round the edges of the baſkets, &c. to keep the fruit from being bruiſed; then put in a layer of fruit, and over that another layer of paper; and ſo on, a layer of fruit and of paper alternately, till the baſket or hamper be full: cover the top with paper three or four times double, to exclude the air and froſt as much as poſſible. Every different ſort of fruit ſhould be packed ſeparately; and it will be proper to fix a label to each baſket or hamper, with the name of the fruit that it contains, and the time of its being fit for uſe.

But the beſt way of keeping fruit is, to pack it in glazed earthen jars. The Pears or Apples muſt be ſeparately wrapped up in ſoft paper, then put a little well-dried bran in the bottom of the jar, and over the bran a layer of fruit; then a little more bran to fill up the interſtices between the fruit, and to cover it; and ſo on, a layer of fruit and of bran alternately, till the jar be full; then ſhake it gently, which will make the fruit and bran ſink a little; fill up the vacancy at top with more bran, and lay ſome paper over it, covering the top with a piece of bladder, to exclude the air; then put on the top or cover of the jar, obſerving that it fits as cloſely as poſſible. Theſe jars ſhould be kept in a room where you can have a fire in wet or damp weather.

Of Packing Fruit for Carriage.

If fruit be to be ſent to any conſiderable diſtance, great care ſhould be taken in packing it: which ſhould not be in baſkets, as they are liable to be bruiſed among heavy luggage, and the fruit, of courſe, will be injured. I would, therefore, recommend boxes made of ſtrong deal, of different ſizes, according to the quantity of fruit to be packed. The following are the dimenſions of the boxes in which we ſend fruit by the Coach to Windſor and Weymouth, for the uſe of his Majeſty and the Royal Family; viz.

The larger box is two feet long, fourteen inches broad, and the ſame in depth. The ſmaller box is one foot nine inches long, one foot broad, and the ſame deep. Theſe boxes are made of inch deal, and well ſecured with three iron clamps at each corner; they have two ſmall iron handles, one at each end, by which they are faſtened to the roof of the coach: in theſe boxes we ſend Melons, Currants, Pears, Peaches, Nectarines, Plums, and Grapes, packed ſo as always to have the heavieſt fruit at bottom. The Melons are wrapped up in ſoft paper, the Pears, Peaches, Nectarines, Plums,

and

and Grapes, are firſt wrapped up in Vine-leaves, and then in paper. The Cherries and Currants are packed in a flat tin box one foot four inches long, ten inches broad, and four deep.

In packing, proceed thus:—Firſt, put a layer of fine long dry moſs in the bottom of the tin box; then a layer of Currants or Cherries, then another layer of moſs; and ſo on, alternately fruit and moſs, until the box is ſo full, that when the lid is haſped down the fruit may be ſo firmly packed as to preſerve them from friction.

Make a layer of fine moſs and ſhort ſoft dry graſs, well mixed, in the bottom of the deal box; then pack in the Melons with ſome of the ſame, packing it tight in between all the rows, and alſo between the Melons in the ſame row, till you have finiſhed the layer; chooſing the fruit as nearly of a ſize as poſſible, filling up every interſtice with the moſs and graſs. When the Melons are packed, lay a thin layer of moſs and graſs over them, upon which place the tin box with the Currants, packing it firmly all round with moſs to prevent it from ſhaking; then put a thin layer of moſs over the box, and pack the Pears firmly (but ſo as not to bruiſe them) on that layer, in the ſame manner as the Melons; and ſo on with the Peaches, Nectarines, Plnms, and, laſtly, the Grapes, filling up the box with moſs, that the lid may ſhut down ſo tight as to prevent any friction among the fruit. The boxes ſhould have locks, and two keys, which may ſerve for them all; each of the perſons who pack and unpack the fruit having a key.

The moſs and graſs ſhould always be returned in the boxes, which, with a little addition, will ſerve the whole ſeaſon, being ſhaken up and well aired after each journey, and keeping it ſweet and clean. After the wooden box is locked, it will be neceſſary to cord it firmly.

My reaſon for being ſo particular on packing of fruit is, that I have known inſtances of its being totally ſpoiled in the carriage from improper packing.

By purſuing the above method we have never failed of ſucceſs; and if fruit be packed according to the foregoing directions it may be ſent to the fartheſt parts of the kingdom, by coaches or waggons, with perfect ſafety.

CHAPTER XXVI.

OF THB CANKER, AND GUM.

A Deſcription of the Canker; its Origin and Progreſs —Full Directions for Curing it—Of the Gum and its Remedy.

THE Canker is a diſeaſe incident to trees, which occaſions the bark to grow rough and ſcabby, and turns the wood affected to a ruſty brown colour. This diſeaſe, if no remedy be applied, will in time totally kill the tree.

Apple-trees are very liable to be infected with the canker from the following cauſes, viz.

From injudicious pruning, from the foot-ſtalks of the fruit being left on the trees, and from injuries ſuſtained by applying ladders in gathering the fruit; theſe injuries are very hurtful to the tree, and will infallibly bring on the canker when no remedy is applied. A man ought to ſtand on ſteps, inſtead of a ladder, when the fruit is out of his reach from the ground. Care ſhould alſo be taken in nailing, that the ſhreds be not too tight, which cauſes a ſwelling in the ſhoot, and very often produces the canker.

Another cauſe of the canker is, when we have very wet Autumns, ſuch as that of 1799, which prevents the young wood from ripening, and a hard froſt ſetting in after it kills the young ſhoots: theſe, if left on the tree, will bring on the canker, and increaſe it rapidly. Birds and inſects devouring the buds will have the ſame effect.

Careleſs people frequently leave the dead ſhoots on the tree throughout the Summer, which will infallibly bring on the canker. Some even leave them for years, until the tree is totally killed. They ſhould be cut off in the end of April, or beginning of May; as by that time you will be able to ſee how far the diſeaſe has advanced. I would adviſe to cut two or three buds, or even more, below the apparently diſeaſed part, as the canker frequently reaches a great way farther in the heart of the ſhoot than it appears to do on the outſide: you muſt cut down till the brown colour in the ſhoot diſappears, and nothing remains but ſound white wood.

The truth of the foregoing obſervations will appear evident to any perſon who takes notice of the Apple-trees with their mutilated ſtag-looking heads, as he rides or walks along the road.

It is a general opinion, that the canker in all trees proceeds from the nature of the ground in which they are planted; ſuch as a four clay, a ſhingly or gravelly ſoil, &c.

My late and much-eſteemed friend Mr. Hudſon, author of the "Flora Anglica," was of this opinion, till I convinced him of the contrary by ſome experiments made at Nutwell, near Exeter, the ſeat of the late Sir Francis Drake, a gentleman very fond of gardening and agriculture. Mr. Hudſon ſaid, it would be to no purpoſe to make any attempt to cure the Apple-trees, as the ground was of ſuch a nature as to bring on the canker. The trees were, indeed, in a ſad condition, being covered all over with lichens and moſs, and very much infected with the canker. I requeſted Mr. Hudſon to fix on ſome of the worſt; we then deſired the gardener to open the ground round their roots, which we found perfectly ſound, the bark of them ſmooth, and not the leaſt appearance of the canker to be ſeen.

The canker, as before obſerved, proceeds from bruiſes in the bark, from limbs cut off, &c. When theſe limbs begin to rot and grow hollow, they convey the canker to the root; for it always proceeds from the branches and ſtem to the roots, and never from the roots to the tree.

It is granted, however, that all fruit-trees love a fine rich mellow loam, and thrive much better in it than in a ſhingly or gravelly ſoil.

When by accident, or improper treatment, trees receive large wounds, and the cure is left to nature, they are frequently overrun with gum and canker, which, if not checked, will in a ſhort time totally ruin them.

In this caſe you muſt carefully pare off, with a draw-knife, or any other convenient inſtrument, all the diſeaſed part of the bark. The inner white bark is frequently infected; this muſt alſo be cut away till no appearance of infection remains. The infection in the inner bark appears like dots made with a pen, all of which muſt be cut clean out; for, if any part of the canker be left, it will infect the new wood and bark. Wherever you ſee gum oozing out, you may reſt aſſured that the canker is not quite eradicated; which, if ſuffered to remain, will ſpread till the whole tree becomes a maſs of gum and canker, and will be killed in a very ſhort time.

When the trunk is become hollow, cut the looſe rotten part clean out till you come to the ſound wood, taking care to round the edges of the hollow part; then apply the Compoſition in a liquid ſtate, laying it on with a painter's bruſh wherever the cankered bark has been pared off or the dead wood cut out, till theſe places are entirely covered with it: when that is done, ſhake ſome of the powder of wood-aſhes and burnt bones over the Compoſition, and pat it gently down with your hand. See the Chapter ON THE MAKING AND LAYING ON OF THE COMPOSITION.

If the foregoing directions be carefully followed, the canker will be completely eradicated, and the hollow trunk in time be filled up with ſound wood.

When the ſtem is much decayed, it will be abſolutely neceſſary to open the ground, examine the roots, and cut off all the rotten parts. When you have cut out all the rotten and decayed parts below ground, and ſcraped the hollow clean, make up a maſs of the Compoſition mixed with ſome clay, like what is uſed for grafting; then fill the hollow part with it to within about two inches of the ſurface of the ground, treading it in with your foot, or preſſing it in with the hand, as cloſe as you poſſibly can, to prevent the wet from penetrating to the roots, and leave the ſurface of the Compoſition ſloping from the tree towards the outſide of the border, to throw the wet off, which will prevent the freſh part of the root from rotting; then cover the root over with mould level with the reſt of the border.

When you have examined all the old wounds where large limbs have been cut off, you ſhould next examine the old bark; and, if you find the outſide of it wrinkled and cracked, pare it off, as it is always, when in that ſtate, very much hurt by the canker. This ſhould be done with the draw-knife, or other ſharp inſtrument; then apply the Compoſition as before directed, which will bring on a fine ſmooth bark under it. In the ſucceeding Winter, or Spring, you will ſee all the plaſter, with the old part of the bark that was left in the hollow parts of the tree, or where old branches had been amputated, peeling off and ſhewing the ſmooth bark underneath. You ſhould then ſcrape off, with a wooden or bone knife, what old bark remains in the hollows where the draw-knife could not reach without cutting too much away. When that is done, mix up ſome freſh cow-dung with ſoap-ſuds and urine, making it very thin, and give the tree a coat of this mixture all over where the bark has been ſcraped off: the cow-dung will adhere to it, and heal the parts where you were obliged to ſcrape to the inner bark. This waſh will remain till the freſh bark comes on; then it will be diſcharged of itſelf during the Summer, or the next Spring, leaving a new freſh ſmooth bark where the old and cankery was taken off. Next Spring, if any of the old bark remains, you may repeat the ſame operation, which will cauſe all the remaining old bark to ſlough off like a ſcab from a wound on the human body.

By theſe means you will keep your trees in a fine flouriſhing healthy ſtate, and, in general, prevent them from becoming bark-bound. If any of them, notwithſtanding, ſhould be bark-bound, you muſt ſcarify them, by taking a ſharp knife, and running the point of it ſtraight down the middle of the ſtem from top to bottom; taking care to run your knife through the outer bark only; then, with a bruſh, or your finger, rub in ſome of the Compoſition, to prevent the inciſion from bringing on the canker. This operation will cauſe the tree to expand the bark and become very flouriſhing.

Remember to cut off all the ends of the ſmall ſhoots where the canker had injured them laſt year. Cut off alſo the old fruit-ſtalks, and all the ſmall dead ſtubs, which, if left, will never fail to bring on the canker.

The rough or cankery bark on that ſide of trees which is next the wall ſhould be ſcraped or pared off with a tool made in the form of a ſickle, which, with other tools, will be deſcribed hereafter.

It is much to be regretted, that fruit-trees in general throughout this kingdom are in a mutilated unfruitful ſtate. After Gentlemen have purchaſed the young trees from Nurſeries, and planted them in their orchards and gardens, they think every thing neceſſary is done; when, in fact, the greater part of the work is yet to come. In packing and carriage, the ſtems and branches are very frequently bruiſed; in that caſe, the injured parts of the bark and wood muſt be carefully cut out, and the Compoſition immediately applied: this may be done when you head the trees, which operation ſhould be performed in April, May or even June, when the bud begins to ſhoot; but by no means cut off any of the ſhoots, except thoſe that are broken or bruiſed very much. When this is neglected, the canker will follow,

to

to the great injury, if not the death, of the trees. How common is it to ſee, in all parts of the country, great numbers of trees ſo affected with this diſeaſe as not to produce fruit enough in twelve or fourteen years to pay half the expence attending them! whereas, if they were to be managed according to the foregoing directions, they would more than pay all the expence in three years. It is common, when young trees do not thrive, either to blame the nurſeryman for ſending bad or diſeaſed trees, or to attribute their unthriving ſtate to the nature of the ſoil; whereas the fact is, that this frequently ariſes from the inattention or miſmanagement of the perſon who plants and ſuperintends them. If the injured and diſeaſed parts be not cut out at an early period, the trees will not thrive, but will become cankery and ſtunted, and cannot be recovered afterwards without a great deal of labour and trouble; whereas, if the directions given for heading trees the firſt year, and cutting out the diſeaſed parts, be attended to, the trees will flouriſh, and bear large crops of fine and well-flavoured fruit.

The

The Gum.

The Gum is a kind of gangrene incident to fruit-trees of the ſtone kind, and ariſes from the following cauſes: from injudicious pruning, from bruiſes, or any injuries received in the wood or bark. This may happen from ſtrokes of the hammer in nailing, from pinching the ſhoots by nailing the ſhreds too tight, or by driving the nails too cloſe to the branches. It may alſo be occaſioned by leaving the footſtalks of the fruit, or by pruning in Summer and cutting the ſhoots to ſhort ſtumps, and by injuries ſuſtained by a careleſs application of ladders in nailing and gathering the fruit, &c. but it particularly originates where large limbs have been lopped or broken off. This diſeaſe may be known before the gum itſelf makes its appearance. The bark at firſt becomes of a browniſh colour, which gradually grows darker, till at laſt the gum begins to ooze out like little bliſters. As ſoon as any of theſe ſymptoms are obſerved, the infected part ſhould be cut out with a ſharp inſtrument, and the Compoſition and powder applied immediately. You muſt obſerve to cut out the gum perfectly clean; you will ſee it oozing out from between the wood and bark: this muſt be followed till you come to the white clean bark and wood If afterwards any gum ſhould make its appearance, it muſt be ſcraped off; which is beſt done when it is moiſtened with rain, as you can then ſcrape it off eaſily without hurting the bark. This muſt be done without delay, otherwiſe the diſeaſe will rapidly advance.

When trees are hollow, it will be neceſſary to examine them carefully to ſee whether any grubs have entered the bark and wood, which you will know by their perforating the bark. If there be any, they muſt be carefully cut out before the Compoſition is applied.

CHAPTER XXVII.

OF THE MILDEW, HONEY-DEW, AND BLIGHTS.

A Description of the Mildew, and a Remedy for it—Of the Honey-dew and its Remedy—A Description of different Sorts of Blights, and the best Means of preventing them.

Of the Mildew.

THE Mildew, a diſeaſe very hurtful to plants, is a kind of thick clammy moiſture, which falls on, or rather tranſpires from, the leaves and bloſſoms of plants. This clammy ſubſtance, by ſtopping up the pores, prevents perſpiration, and hinders the growth of the plant. But what is commonly called mildew is an inſect which is frequently found in vaſt numbers feeding upon this moiſture. Mr. T. S. Segar, in a treatiſe upon this ſubject, ſays, that the mildew is of a very ſharp corroſive nature, and by its acrimony hinders the circulation of the nutritious ſap; in conſequence of which the leaves begin to fade, and the bloſſoms and fruit are greatly injured.

I have obſerved that, contrary to the common opinion, trees are more liable to mildew on South and Weſt walls, than on an Eaſt wall; and I have frequently removed ſuch trees from a South or Weſt wall, to a North or Eaſt wall, where they have perfectly recovered.

Whenever you apprehend danger, waſh or ſprinkle the trees well with urine and lime-water mixed; and when the young and tender ſhoots are much infected, it will be neceſſary to waſh them well with a woollen cloth dipped in the following mixture, ſo as to clear them of all the glutinous matter, that their reſpiration and perſpiration may not be obſtructed.

Take tobacco one pound, ſulphur two pounds, unſlaked lime one peck, and about a pound of elder buds; pour on the above ingredients ten gallons of boiling water; cover it cloſe and let it ſtand till cold; then add as much cold water as will fill a hogſhead. It ſhould ſtand two or three days to ſettle: then take off the ſcum, and it is fit for uſe.

Of the Honey Dew.

The Honey-Dew is a ſweet ſaccharine ſubſtance found on the leaves of certain trees, and is generally ſuppoſed to fall from heaven like dew; but this is a miſtaken opinion. One kind of honey-dew tranſpires from the leaves of the trees where it is found: and the other is the excrement of a ſmall inſect called a vine-fretter, a ſpecies of Aphis. Bees and ants are very fond of both theſe kinds of honey-dew.

As the honey-dew, by its viſcous quality, cloſes up the pores, and ſtops the perſpiration of trees, it muſt of courſe be very hurtful to them. This diſeaſe ſhould be treated in the ſame manner as the mildew; but, as has been already obſerved, trees ſhould be watered, or waſhed, early enough in the day to get dry before the cold of the night comes on; nor ſhould it be done while the ſun ſhines very hot, which would be likely to ſcorch the bloſſoms and leaves.

Of Blights.

Blights are very deſtructive to fruit-trees, ſometimes deſtroying the whole tree; but more frequently the leaves and bloſſoms, while the tree itſelf remains unhurt.

One cauſe of the blight is, the continuance of a dry eaſterly wind for ſeveral days together, which ſtops the perſpiration in the tender bloſſom; and a long continuance of the ſame weather equally affects the tender leaves, cauſing them to wither

and

and decay: the perſpiring matter is thereby rendered thick and glutinous, and ſo becomes food for thoſe ſmall inſects which are always found in vaſt numbers on fruit trees that are affected by this ſort of blight.

Theſe inſects, however, are not the original cauſe, as ſome imagine, but the natural conſequence of blights; for wherever they meet with ſuch a proper nutriment they multiply amazingly, and greatly promote the diſtemper when no method is taken to prevent it.

The beſt remedy for this diſtemper that I know of is, to waſh them with urine and ſoap-ſuds, as before directed; and the ſooner this is performed, whenever we apprehend danger, the better: if the young and tender ſhoots ſeem to be much infected, waſh them with a woollen cloth dipped in the ſame liquid that is recommended for the mildew.

Another cauſe of blights in the Spring will be found in ſharp hoary froſts, which are often ſucceeded by hot ſunſhine in the day-time; theſe are certain and ſudden deſtruction to the fruit. Sharp pinching froſty mornings, which often happen when the trees are in flower, or while the fruit is very young, occaſion the bloſſoms or fruit to drop off, and ſometimes greatly injure the tender ſhoots and leaves.

The only method yet found out to prevent this miſchief is, the carefully covering the walls with netting, &c. as before directed *. The covering is to remain on during the night, and to be taken off in the day-time. This method has been reckoned of little ſervice by ſome, which, indeed, may be the caſe when the coverings are not properly uſed ; for, if the trees are kept too long covered, the young branches and leaves will be ſo weak as not to be able to bear the open air when they are expoſed to it.

The ſame conſequences will follow when the trees are incautiouſly expoſed to the air after having been long covered.

But if the covering be properly performed, it will frequently preſerve the fruits under it, when there happens almoſt a general failure in the neighbourhood where this precaution has been neglected. The great trouble which ſeems to attend it may deter many from putting it in practice ; yet if the nettings, or other coverings, be ſo contrived as to draw up and let down by means of pullies, the buſineſs may be done with eaſe and expedition ; and the ſucceſs attending it will make ample amends.

But what is called a blight is frequently no more than a weakneſs or diſtemper in trees.

* P. 12, 13, 51.

This is the caſe when trees againſt the ſame wall, and enjoying the ſame advantages in every reſpect, differ greatly in their health and vigour, the weak ones appearing to be continually blighted, while the others remain in a flouriſhing condition. This very great difference, in ſuch circumſtances, can be attributed only to the different conſtitutions of the trees, proceeding from a want of proper nouriſhment, or from ſome bad qualities in the ſoil, ſome diſtemper in the ſtock, buds, or cions, or from miſmanagement in the pruning, &c. all of which are productive of diſtempers in trees, of which they are with difficulty cured.

If the fault be in the ſoil, it muſt be dug out, and freſh mould put in its place; or the trees muſt be taken up, and others better adapted to the ſoil planted in their room. It will be found abſolutely neceſſary always to endeavour to ſuit the particular ſorts of fruits to the nature of the ſoil; for it is in vain to expect all ſorts of fruit to be good in the ſame ſoil.

If the weakneſs of the tree proceed from an inbred diſtemper, it will be adviſable to remove it at once, and after renewing the earth to plant another in its place.

But if the weakneſs has been brought on by ill management in the pruning, which is frequently the caſe, I would adviſe the method of pruning and training which is laid down in this treatiſe to be adopted without loſs of time.

How common is it to ſee the young luxuriant branches trained up to their full length every year, and ſo carried to the top of the wall in a very ſhort time! by which the fruit-bearing branches are robbed of a great part of their nouriſhment, which weakens them ſo much that they have not ſtrength to produce fruit; but the bloſſoms fall off, and not unfrequently the branches decay, ſometimes even their whole length, and this is aſcribed to a blaſt! Luxuriant ſhoots ſhould be ſtopped, and all ſuperfluous wood ſhould be cut out: otherwiſe they will exhauſt a great part of the nouriſhment which ſhould go to the ſupport of the fruit-bearing branches.

There is another ſort of blight that ſometimes happens pretty late in the Spring, viz. in April and May, which is very deſtructive to fruit-trees in orchards and open plantations, and againſt which we know of no effectual remedy. This is what is called a fire-blaſt, which in a few hours hath not only deſtroyed the fruit and leaves, but often parts of trees, and ſometimes entire trees have been killed by it.

This is generally thought to be occaſioned by certain tranſparent flying vapours, which may ſometimes take ſuch forms as to converge the ſun's rays in the manner of a burning-glaſs, ſo as to ſcorch the plants they fall upon, and this in a greater or leſs degree in proportion to their convergency. As this generally happens in cloſe plantations, where the vapours from the earth, and the perſpirations from the trees, are pent-in for want of a free circulation of air to diſperſe them, it points out to us the only way yet known of guarding againſt this enemy to fruits; namely, to make choice of a clear healthy ſituation for kitchen-gardens, orchards, &c. and to plant the trees at ſuch a diſtance as to give free admiſſion to the air that it may diſpel thoſe vapours before they are formed into ſuch volumes as to occaſion theſe blaſts.

But blaſts may alſo be occaſioned by the reflection of the ſun's rays from hollow clouds, which ſometimes act as burning mirrors, and occaſion exceſſive heat. Againſt this there is no remedy.

CHAPTER XXVIII.

OF INSECTS, &c.

Of the different Sorts of Insects infeſting Fruit-Trees, and the Method of deſtroying them—How to preſerve Fruit from Birds; and of deſtroying Rats and Mice.

Of the Aphis *.

APHIDES, or plant-lice, are a very numerous and deſtructive tribe of inſects. Entomologiſts enumerate 75 ſpecies of them; but probably there are many more, as every tree infeſted by them has a diſtinct ſpecies; and Linnæus names them from the different trees that they live upon; as the Currant aphis, the Plum aphis, the Cherry aphis, &c. &c. The males, which are very few in compariſon of the females, have wings; but the females are apterous, or without wings.

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* Thoſe who wiſh for farther information reſpecting inſects, may conſult Reaumur's Hiſtory of Inſects, or Dr. Anderſon's Recreations in Agriculture, Natural Hiſtory, &c.

Aphides are devoured by the larva of the Myrmeleon Formicarius, or ant-eater, of Linnæus. Ants are likewiſe very fond of them, on account of a ſweet liquid which they eject from the anus. Aphides are extremely common.

Fruit-trees are frequently very much infeſted with different ſpecies of the aphis; the Plum, in particular, ſuffers greatly by them. Thoſe which I have moſt frequently found on Plums are, the brown, the green, and the light ſea-green aphis; but as before obſerved, different ſorts of trees generally have different ſpecies of aphides. Great care ſhould be taken to deſtroy theſe pernicious inſects at as early a period of their growth ss poſſible; otherwiſe they will conſume the leaves and fruit for that ſeaſon. The beſt method that I have found for this purpoſe is, to take ſome fine wood-aſhes mixed with one third part of fine unſlaked lime, and throw it on with a common dredging-box, till you have covered the underſides of all the leaves where you find the inſects: this ſhould be done in the morning early while the dew is on the leaves, which will cauſe the powder to adhere to them; letting them remain ſo covered with the powdered lime for three or four days. Then mix unſlaked lime and ſoft water, or water that has been expoſed to the ſun a week at leaſt, at the rate of half a peck to thirty-two gallons, and ſtir it well two or three times a day for three or four days. If you have many trees that are infected with inſects, mix up a large quantity in the ſame proportion as the above. I generally mix as much at once as will fill a ciſtern * about ſeven feet long by three and a half broad, and three feet deep, and that contains about 550 gallons, which, according to the foregoing proportion, requires about two buſhels and half a peck of lime. With this liquid, after the lime has ſubſided, give the trees a good watering, obſerving to throw a conſiderable part of it under the leaves, by a barrow engine; this ſhould be repeated once a day, for ſix days, which will deſtroy all the aphides. The engine that I would recommend is that of the late Mr. Winlaw's conſtruction, which may be had of Meſſrs. Chieſlie and Yowle, No. 72, Margaret-Street, Cavendiſh Square.

If you find the inſects begin to make their appearance again, apply the powder as before directed, and repeat the watering.

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* If it be a leaden ciſtern, a little loam, enough to cover the bottom, muſt be thrown in, and then trod down, before the lime and water are put in: the loam will prevent the lime from corroding the metal.

Particular Directions for using the Lime-water.

Take the clear water after the lime has ſettled, fill the engine with it, and give the trees a good watering, throwing it with as much force as you can under the leaves ; preſſing your fore-finger over the mouth of the pipe to ſpread the water like the falling of ſmall rain, which you may very eaſily do, at the ſame time wheeling the engine backwards and forwards, that no part of the tree be miſſed. This ſhould be done in cloudy weather, or when the ſun is off the wall. If the trees are on an Eaſt wall, you may begin to water them about half paſt eleven o'clock ; if on a North wall, you may water them the firſt thing you do in the morning ; and if on a South wall, at four o'clock in the afternoon ; repeating the watering for at leaſt ſix days ſucceſſively. But if there be cold Northerly and Eaſterly winds, or froſty nights, the watering ſhould be diſcontinued till the weather is milder.

Be always careful that your trees get dry before night, and be ſure never to water when the ſun is on them ; nor yet water them with the grounds of the lime, which will make the trees look very unſightly, and alſo injure the leaves.

When aphides are numerous at the ends of the ſhoots, the leaves there will be curled up ; theſe ſhould be all ſtript off and the inſects cruſhed with the foot.

Of the Acarus.

The Acarus, or Red Spider, is one of the moſt deſtructive inſects that can infeſt plants, particularly in forcing-houses.

These inſects have no wings, and the female is oviparous.

There are not leſs than 82 ſpecies of this genus. The Acarus is very common on trees, particularly the Currant, on the fruit of which it is frequently ſeen running.

Theſe inſects attack the Vines, Nectarines, Peaches, and Cherries; and forced French-Beans are very ſubject to their depredations, as are alſo Peaches and Nectarines on the natural wall, in hot weather. Melons in frames are very much infeſted with them. I once ſaw a ridge of Melons, of ſeventy lights, ſo much injured by them, that when the fruit was full-grown, it was good for nothing, and the ſtems and leaves were completely exhauſted of their moiſture by theſe inſects feeding on them. They are equally hurtful to moſt exotics in hot-houſes.

The beſt thing that I know for deſtroying theſe pernicious inſects is moiſture; which will alſo deſtroy many other inſects in hot-houſes.

Frequent watering of wall-trees, ſtandards, &c. with lime-water (the making and uſing of which is deſcribed in the directions for deſtroying the Aphis), and throwing it plentifully on the underſide of the leaves, where the Acarus is generally found, will in a ſhort time extirpate that deſtructive inſect.

For plants, &c. in hot-houſes, I would recommend uſing water only, and in the following manner:

Between three and four o'clock in the afternoon fill the barrow engine with ſoft-water, or ſuch as has been expoſed to the ſun all day, and wheel it along the foot-paths of the houſe, where they are wide enough to admit it, and ſprinkle all the plants, preſſing your finger on the top of the pipe, to ſpread the water like a fine ſhower of rain, playing alſo againſt the top lights and ſhelves till the water ſtands an inch deep in the paths of the houſe *. If you cannot conveniently get the engine into the houſe, open the front lights, or, when there are no front lights, ſlide down the top lights, and throw the water in at the front or top. When you begin this operation, if in the inſide, every light muſt be ſhut; and if you throw the water in at the front, you muſt keep only one light open, which ſhut immediately when you have ſuf-

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* I have lately ſeen a ſmall copper engine, made by Mr. Philips, Engine-Maker, Blackfriars Road, which anſwers very well, when a barrow engine cannot be got into the houſe.

ſufficiently watered that part of the houſe oppoſite to it; and, then opening another light, proceed as before; and ſo on, till the whole is properly watered. The houſe muſt then be kept cloſe ſhut till next morning; this will cauſe ſuch an exhalation from the glaſs, tan, (if there are any tan-beds in the houſe,) &c. that the plants will be covered all over with the vapour; which will infallibly deſtroy the Cocci, Aphides, and other inſects: but the watering muſt be repeated every afternoon, during hot weather only. By this you will alſo ſave a great deal of labour in watering; but ſuch plants as require much watering ſhould be watered before you begin to ſprinkle the houſe. Before morning the plants will have imbibed all the moiſture, and the paths will be perfectly dry.

When I lived at the Botanic Gardens, Chelſea, I obſerved in hard Winters, when we were obliged to keep ſtrong fires in the ſtoves night and day, that the plants which ſtood on ſhelves in the dry ſtoves were ſo ſcorched up that the leaves uſed to drop off, as from deciduous trees in Autumn, which gave them a very diſagreeable appearance. This induced me to conſider what could be done to prevent it; when the following method occurred to me: about eight in the morning, when the ſun ſhone out, and there was the appearance of a fine day, I threw in water till it covered the floor, which was of tile, from one to two inches deep, and kept the houſe ſhut the whole of the day, unleſs the thermometer roſe to about eighty degrees, which ſeldom happens at that ſeaſon of the year; in that caſe I opened the door to admit a little air. By the middle of the day the water was entirely exhaled, and the floor perfectly dry. This I uſed to repeat two or three times a week, in ſunny weather: the plants in about a week's time began to throw out their foliage, and in a fortnight or three weeks they were in full leaf. This ſucceſs induced me to take the ſame method with the tan ſtoves and other houſes in Summer, when troubled with inſects, and I had the ſatisfaction to find that it had the deſired effect.

Of the Acarus on Melons.

As we are now treating of inſects, although it may look like a departure from my original plan, I hope that ſome inſtructions for deſtroying the red-ſpider on Melons will not be unacceptable.

Melons, in dry weather, and with a dry heat, are very apt to be infeſted with the red-ſpider; and you may always obſerve the ſymptoms long before you can ſee theſe inſects with the naked eye, by the leaves curling and cracking in the middle. Whenever you obſerve them in that ſtate, in fine warm ſunny weather, I would recommend watering them all over the leaves from a watering-pot with a roſe, or an engine, about ſix in the morning; and about eight o'clock ſhade them with mats, if the ſun ſhines, and ſhut the frames cloſe down till about eleven; then admit a ſmall quantity of air, letting the mats remain till about three in the afternoon, when they ſhould be taken off. Shading with mats will prevent the leaves from being ſcorched by the ſun while they are wet. If the wind be South, or South-Weſt, I would recommend watering them again about three in the afternoon, ſhutting them up cloſe to keep the heat in, which will cauſe a ſtrong exhalation, and deſtroy the ſpiders, as they be no means love moiſture. In watering, throw as much as poſſible on the underſide of the leaves, where the inſect generally lodges; the vines may be gently turned, taking very great care not to hurt them; by which means you can eaſily throw the water all over the underſide of the leaf; which muſt be done in a gentle ſhower from the engine, or from a watering-pot with a roſe, ſo as not to waſh up the mould on the plants: at the ſame time throw great plenty of water on the lights and ſides of the boxes. After you have done watering, lay the Vines gently down again in their former poſition. If a ſunny day, let the mats remain as before directed until the leaves of the plants are perfectly dry, admitting air according to the heat of the day.

Before the frames and lights are uſed, I would recommend waſhing them well, both inſide and out; firſt, with clean water, and then with ſoap-ſuds and urine mixed; uſing a bruſh or woollen rag in the waſhing; this will kill the eggs of the ſpiders and other inſects that may have been depoſited the preceding ſeaſon.

When the ridges are fit for putting the mould on for the hills to plant the Melons in, it ſhould be from a foot to fifteen inches deep, and the reſt of the bed ſhould be covered with light mould, or rotten leaves, about one inch deep, to keep down the ſteam. Take care not to make the hills too broad at firſt (a wheel-barrow full and a half will be enough for one hill), and obſerve that the heat is not too great, which will burn the mould and the roots of the plants. You will know, when the beds are of a fine temperate heat, from ſticks ſtuck in at different parts of the bed, by the feel of your hand, and the ſticks having a pleaſant ſweet ſmell.

It will be very proper to water the hills, with a watering-pot having a roſe, once a day for two or three days before you put in the plants, keeping the lights ſhut, which will deſtroy any eggs of the ſpider that may yet remain in the crevices of the boxes and lights.

The day on which you mean to put in the plants, you ſhould give the beds a great deal of air, to let out the ſteam that has been penned in; then turn over the hills, and put in your plants about three o'clock in the afternoon, making a hollow circle round the bottom of each hill, to ſeparate the mould of the hills from that on the bed, which will ſuffer the ſteam to evaporate more eaſily; then watering the plants, ſhut them down till next morning, admitting air according to the heat of your bed, taking care not to give too much till your plants are well rooted in the hills, which will be in a couple of days; it will alſo be neceſſary to ſhade them in the heat of the day, to prevent the plants from flagging.

In cold froſty weather you muſt by no means ſprinkle the plants, as the froſt in the night will infallibly bring on the canker.

Soft water ſhould be uſed in ſprinkling, or ſuch as has been expoſed ſeveral days to the ſun. If the water be very hard, put ſome wood-aſhes into it, and ſtir it up two or three times a day: it will be fit for uſe in the courſe of two days; let the aſhes ſubſide, and uſe the clear water only.

If your Melons have been infeſted with the ſpider in the preceding year, by no means uſe any of the mould again.

Of the Coccus.

The Coccus is a genus of inſects belonging to the order Hemiptera, whoſe males have wings, but the females have none.

The moſt common inſects of this genus are thoſe which attach themſelves to Peach, Nectarine, and Pear trees; and when full grown they have ſomewhat the appearance of a boat with the keel turned uppermoſt. Theſe are apparently without feet, eyes, or other members, while in this ſtate; and ſo much reſemble ſome kinds of galls, or excreſcences of the bark, as frequently to be taken for ſuch. A thin film of a white cotton-like ſubſtance is interpoſed between the flat part of the body and the tree. This is common, in a greater or leſſer quantity, to all the ſpecies, and appears at firſt all round the edge as a kind of cement, to join it to the tree.

The males are very few in proportion to the females, and not nearly one fourth of their ſize; they are beautiful little flies, which, after a ſhort but active life, terminate their exiſtence without having taſted food, being provided with no ſort of organs for that purpoſe.

Peach, Nectarine, and Pear trees, are very much infeſted with theſe inſects: they frequently cut through the bark, and the trees then appear as if they had been ſcratched by cats. I have ſeen ſome trees with this appearance all over them.

When theſe inſects firſt appear on the bark, they ſhould be ſcraped off with a wooden knife, and the ſtem and branches of the tree well waſhed with ſoap-ſuds and urine, applied with a ſtiff painter's bruſh. This ſhould be done in February, before the buds begin to come out. But if the outer bark is perforated, it muſt be cut or pared off with a long knife; and if you find any brown ſpots in the inner bark, they muſt be carefully cut out. This diſeaſe is one great cauſe of the canker, and of the death of the tree. [*See* PLATE IX. *Fig.* 3.]

When this diſeaſe has made its way through both barks, as is often the caſe, the branches on each ſide of the tree may be cut cloſe to the ſtem, if it has an upright one; but if the tree be trained fan-faſhion, the beſt way is to head it near to the place where it was grafted. I have headed old Pear-trees which were ſo dead, except a ſmall ſtrip of live bark on one ſide, that you might rub the bark off them as eaſily as off a bundle of faggot-ſticks that had been cut upwards of a year; yet theſe trees have ſhot out freſh branches to the length of ſeventeen feet in two years, and produced fine fruit the ſecond year. Apply the Compoſition immediately after heading, or cutting, or paring off the diſeaſed bark.

A very deſtructive ſpecies of the Coccus tribe has lately done incredible damage to the Apple-trees in the nurſeries and gardens in the neighbourhood of London. Some Nurſerymen have loſt ſeveral thouſand Apple-trees in one year. Theſe inſects attach themſelves to the bark by their ſuckers, and, by feeding on the juices of the tree, rob it of its nouriſhment. Such trees as are infeſted with them have a ſickly appearance. I am happy, however, in being able to ſay, that I have nearly extirpated them from his Majeſty's gardens at Kenſington: but, as our neighbours do not pay the ſame attention to their trees as we do to ours, the inſects frequently emigrate to us; this obliges me to be very attentive to their firſt appearance; and, as I take the earlieſt opportunity of deſtroying them, the trees ſuffer very little from their depredations.

Theſe inſects make their neſts generally where branches have been cut off, or in hollow places, where the canker has eaten holes in the trees. Their firſt appearance is like a white down; on touching, or rubbing them, they tinge the fingers of a crimſon colour, like cochineal. If ſuffered to remain long on trees, they take wing, like Aphides. The method that I have followed for theſe ten years to deſtroy them is as follows:

I rub the places where their neſts are with an old bruſh, ſuch as painters uſe, till they are all cleaned off; and if the part be canker-eaten I cut it clean out with a knife or chiſel: I then take of ſoap-ſuds and urine equal parts, and with this I waſh the wound and the bark all round it; and with a bruſh apply the Compoſition mixed with wood-aſhes and the powder of burnt bones, covering the wound all over with it. Afterwards I ſhake ſome of the powder of wood-aſhes and burnt bones, mixed with an eighth part of unſlaked lime finely powdered and ſifted, over the hollows, or where knobs have been cut off.

At the ſame time that the trees are cleared of the Cocci the Caterpillars ſhould be picked off.

The firſt time that I obſerved the new Coccus, which has done ſo much miſchief to the Apple-trees about London, was, in a garden of my own at Chelſea, about the year 1782 or 3; and, as far as I can learn, they were imported, among ſome Apple-trees, by the late Mr. Swinton, of Sloane-Street. Mr. Swinton afterwards removed his nurſery to the King's road near Chelſea College, which now goes by the name of the Foreign Nurſery.

All the gardens about Chelſea and Kenſington are now very much infeſted with theſe inſects; and I have frequently ſeen them in ſeveral other parts of the kingdom.

Doctor George Fordyce purchaſed ſeveral Apple-trees at the ſale of the effects of Mr. De la Tour, Editor of the Courier de l'Europe; all of which were from Mr. Swinton's nurſery, and all infected with theſe inſects. The Doctor gave me twelve of theſe trees, which I planted, and very ſoon cleared them of the Coccus.

Meſſrs. Lee and Kennedy, Nurſerymen at the Vineyard, Hammerſmith, Meſſrs. Grimwood and Co. Kenſington, and Meſſrs. Gray and Wear at Brompton-Park Nurſery, have applied train-oil, laid on with a painter's bruſh, with a view of deſtroying theſe inſects, but they have not been ſucceſsful *. Indeed, I by no means approve of applying oil to trees upon any account, as, by ſhutting up the pores, it is apt to render them bark-bound.

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* Since writing the above I have been informed, that the farmers in Kent likewiſe uſe train oil; but if they would make a fair trial of urine and ſoap-ſuds, they would find it more effectual, and it would coſt nothing but labour: beſides, what falls on the borders will make a fine manure. The urine and ſoap ſuds ſhould be ſaved in tubs in Winter; and, as it will be too ſtrong for uſe in Summer, it may be lowered by adding water. This mixture will alſo be found effectual in killing ſlugs that harbour about the roots of the trees and bottoms of the walls. When it ſoaks into the ground, the ſlugs will work their way out, and may eaſily be killed by throwing a little more of the mixture on them from a watering-pot with a roſe.

Of Caterpillars.

Caterpillars are very deſtructive to Cabbages, and all the braſſica tribe, and frequently make depredations on trees, particularly the Apricot. They ſhould, therefore, be carefully obſerved and picked off. A few years ago, Kenſington gardens were very much infeſted with them; but by carefully picking and deſtroying them, and all the aurelia that could be come at, very few are now to be ſeen. During the Winter and Spring, every chryſalis that can be found under the copings of walls, on gates, palings, &c. ſhould be deſtroyed. Many may alſo be found about the doors and windows of houſes, under the eaves, and in many other places.

The beſt method of preventing trees from being infeſted is, to ſcrape the ſtems with a piece of bone or wood made in the form of a knife, taking care not to bruiſe the bark; and afterwards to waſh the tree and wall with an equal quantity of ſoap-ſuds and urine mixed.

As ſoon as the leaves are off the trees in Autumn, they ſhould be raked and ſwept up; then carried to the Melon-ground and mixed up with other leaves and dung for hot beds: by this means you will get rid of a great number of eggs of inſects that are depoſited on the underſide

ſide of the leaves. Then waſh all the ſtems of the trees, and all the ends of the buds, taking care not to hurt the buds: in doing this, what falls will deſtroy the ſlugs that take ſhelter on the offset of the wall and in the borders, before they are dug for planting lettuce, endive, &c. This waſhing ſhould be repeated about the beginning of February, which will deſtroy any eggs of different inſects that may ſtill remain about the trees. A painter's bruſh may be uſed for laying the mixture on the trees, and a ſoft broom, or a bruſh made of the ends of garden matting, for waſhing the wall. The matting ſeems preferable, as being ſoft and flexible, it will enter the holes and crevices.

The mixture that falls on the border and offset of the wall, in this ſecond waſhing, will deſtroy thoſe ſlugs and inſects that made their appearance early. The ſtems and branches of the trees may be waſhed two or three times, or oftener, in the Spring, before the buds begin to ſwell; but the branches muſt not be rubbed after the trees come into flower; you may, however, ſprinkle them over with the mixture from a watering-pot with a roſe juſt before the buds begin to open, but by no means after they are open; as it will, by its glutinous nature, render the bloom liable to be ſcorched by the ſun.

I would recommend the above waſhing, &c. for all trees, ſtandards as well as thoſe on walls; particularly Apple, Cherry, and Plum trees.

If any Caterpillars ſhould remain, they will be diſcovered by the curling of the leaves; for every curled leaf has one or more caterpillars, or other inſects, in it; they ſhould therefore be carefully pulled off, and the inſects cruſhed: if neglected, they will frequently devour every leaf, leaving the tree quite naked, and of courſe deſtroy the fruit for that ſeaſon.

There are ſome gregarious ſorts of caterpillars found in great numbers encloſed in a net, or bag, reſembling a ſtrong cobweb, and fixed to the branches of trees and ſhrubs. Theſe neſts ſhould be carefully picked off, and the inſects cruſhed, by which vaſt numbers of them will be deſtroyed. After you have cleared the tree as well as you poſſibly can, waſh it as above directed, which will deſtroy thoſe ſtragglers that may ſtill remain on it.

Obſerve, that after the trees come into flower, inſtead of waſhing them with urine and ſoap-ſuds, they ſhould be well watered with clear lime-water, mixed with tobacco-water.

There are ſeveral ſpecies of moths that in the caterpillar ſtate are very hurtful to plums and other fruit-trees: it will, therefore, be a great advantage to deſtroy them on their firſt appearance.

It would be of great ſervice to get acquainted as much as poſſible with the economy and natural hiſtory of all theſe inſects, as we might thereby be enabled to find out the moſt certain method of deſtroying them. Were a few of each ſort of caterpillars put in a box or caſe, and fed with leaves of ſuch trees as they generally live upon, they might be obſerved from time to time until they came to the chryſalis, and from that to the moth or butterfly ſtate, and thus a more perfect knowledge of them might be obtained.

It would be neceſſary to have ſeparate diviſions in the caſe for each different ſpecies, and to put ſome earth in the bottom of each diviſion, which ſhould be moiſtened occaſionally, as ſome of them bury themſelves in their chryſalis ſtate, while others adhere to walls, gates, or palings.

Freſh leaves ſhould frequently be put in, and the box or caſe covered with a piece of fine canvas, or gauze, to admit the freſh air.

At the ſame time that the trees are cleared of the Coccus, Aphis, or any other inſects, the Caterpillars ſhould be carefully looked for and picked off. You will obſerve, that they ſhelter themſelves at the ends of the ſhoots, in the flowers, and at the bottom of the footſtalks of the flowers. There are two or three ſorts that infeſt fruit trees, two of a brown and one of a green colour. Four years ago the Apple-trees ſuffered very much by a blight; they had all the leaves eaten off, and, of courſe, bore no fruit. I firſt had all the caterpillars carefully picked off: I then cut out the cankered wood, and waſhed the trees with a mixture of urine, ſoap-ſuds, and freſh cow-dung, ſufficient to bring it to the conſiſtence of paint, laying it on all over the ſtems and branches of the trees, particularly where the decayed parts were cut out: after this, the trees recovered in a manner that ſurpriſed every one who ſaw them: and they ſtill continue in a thriving ſtate, and bear very fine fruit.

In 1795 I uſed the above method with a great many dwarf Apple-trees; and the effect was ſo viſible next ſeaſon, that all who ſaw them took notice of the great difference between them and the remaining trees, which we had left to nature; the latter bearing no fruit, and their leaves being eaten by the caterpillar, while the former have borne fine clean fruit ever ſince.

The trees, twenty-five in number, which I left to nature, continued in a ſickly ſtate for three years, neither bearing fruit nor putting forth ſhoots. After the third year I headed them down, ſcraping the ſtems and cleaning off the inſects ; they are now recovered, having made as fine wood as the others, and are in a healthy flouriſhing ſtate.

Fig. 2. PLATE IX. repreſents different ſtates of a kind of moth, whoſe caterpillar has for many years done great miſchief among Pear-trees on walls. One wall in particular, in Kenſington gardens, was very much hurt every year, for ſeveral years ſucceſſively. I imagined that it had been the effect of lightning, or a blight ; till, on picking off the caterpillars, we found a ſmall ſort in its caſe, ſticking to the leaves, as at *a* (*See the deſcription of the* PLATE.) All the firſt leaves were deſtroyed by the caterpillars : I was, therefore, rejoiced that I had found out the cauſe of their being ſo much injured every year, being perforated in many places, and dropping off very early.

The Chermes.

Chermes is a genus of inſects belonging to the order Hemiptera, and of which there are twenty-ſix ſpecies. They take their ſpecific names from the different plants which they frequent; as the Chermes graminis, or graſs bug; the Chermes ficus, or fig-tree bug, &c. The latter is one of the largeſt of the genus, and is brown above and greeniſh beneath. It has four long wings, which are placed in form of an acute roof. The larva, which is of an oblong form, has ſix feet, and its motion is ſlow. When it is attempted to catch the Chermes, it makes its eſcape rather by leaping than flying, by means of its hinder legs, which play like ſprings. Some of theſe inſects have a manœuvre worthy of notice. Several ſpecies are provided at the extremity of their body with a ſmall ſharp-pointed implement, but which lies concealed; and this they draw out in order to depoſit their eggs, by making a puncture in the plant that ſuits them. By this method, the fir-tree Chermes produces that enormous ſcaly protuberance which is to be found at the ſummit of the branches of that tree, and which is formed by the extravaſation of the juices occaſioned by the punctures. The young larvæ ſhelter themſelves in cells contained in the tumour. The directions for deſtroying the Coccus are applicable to this inſect.

The Thrips.

The Thrips, of which there are eleven ſpecies, alſo belongs to the order Hemiptera. This inſect is, in general, ſo ſmall as to be ſcarcely diſcerned by the naked eye. It is, however, very pernicious to fruit-trees, ſometimes attacking the fruit as well as the leaves. To deſtroy this inſect, follow the directions given for deſtroying the Coccus.

The Phæalna, or Moth.

There are numerous ſpecies of this well-known inſect, and their caterpillars differ greatly as to ſize, ſhape, and colour. All of them, after caſting their ſlough ſeveral times, ſpin their cod, in which they are transformed to chryſalids. They are frequently found in this ſtate, rolled up in the leaves of fruit-trees; particularly thoſe of Pears, Plums, and Cherries. Theſe leaves muſt be carefully picked off, and the inſects cruſhed: the trees muſt then be waſhed with clear lime-water mixed with tobacco-watet. This waſhing would be found uſeful when the inſect is in its larva ſtate, after picking off and cruſhing as many of the caterpillars

pillars as poſſible. *See* CATERPILLARS. (*Page* 382.)

Sphinx or Hawk-Moth.

There are 165 ſpecies of this genus, ten of of which are found in Great Britain and Ireland.

The name of Sphinx is given to this genus on account of the ſingular attitudes of their caterpillars, who apply the hinder part of their body to a branch of a tree, and hold the reſt of it erect, like the fabulous Sphinx. Moſt of them ſpin their cod under ground. The ſphinges appear either early in the morning, or after ſunſet, and fly heavily and ſluggiſhly, often emitting a kind of ſound. Many of the caterpillars are green and ſmooth, ſome brown, or yellow, and others are ſpotted, or have belts. The Sphinx may be deſtroyed by the ſame method as the Phalæna,

The Phalæna Bombyx Neustria.

The Phalæna Neuſtria, or Lackey Moth, lays its eggs in rings round the branches of fruit-trees, exhibiting the appearance of a necklace. Theſe being very hard, and adhering cloſe to the bark, muſt be cut off with a ſharp knife, taking care to wound the bark as little as poſſible; and wherever the knife enters, it will be neceſſary to rub in a little of the Compoſition.

The Papilio.

The Papilio, or Butterfly, belongs to the order Lepidoptera. There are a great many ſpecies of this genus, generally diſtinguiſhed by the colour of their wings: The more common ſorts, with their caterpillars, are ſo well known as to render a deſcription of them unneceſſary. The caterpillars and chryſalids muſt be carefully picked off, and the trees well watered with clear lime-water and tobacco-water mixed.

The Cicada.

The Cicada, Frog-hopper, or Flea-Locuſt, is a genus of inſects belonging to the order Hemiptera. The larvæ of ſeveral of this genus evacuate great quantities of a frothy matter upon the branches and leaves of plants or trees, in the midſt of which they conſtantly reſide, probably for ſhelter againſt other animals; perhaps, alſo, the moiſture of this foam may ſerve to ſecure them from the ſultry rays of the ſun.

As the froth emitted by theſe inſects is very unſightly, and as they are alſo hurtful to trees, by eating the leaves, they ſhould be deſtroyed by rubbing off the larvæ with the hand, and afterwards watering the tree plentifully with ſoft water.

Of Earwigs.

Earwigs are very deſtructive to fruit, particularly Peaches. The method that I would recommend for deſtroying them, and which I have long purſued with ſucceſs, is as follows:

Take old bean-ſtalks, cut them about nine inches long, tie them up, in ſmall bundles, with ſome pack-thread, or with ſmall yellow willows, and hang them on nails againſt the wall, at different parts of the trees. The firſt thing you do in the morning, being provided with a board about eighteen inches ſquare, and a ſmall wooden trowel, take down the bundles of bean-ſtalks, one by one, ſtrike them againſt the board, and with your trowel kill the earwigs as they fall out of the ſtalks. If you follow this up every morning (or every other morning), you will be able to keep them under.

The foregoing method will anſwer for any ſort of trees infeſted with earwigs. In ſome years I have ſeen a great part of the fruit, eſpecially the ſmooth-ſkinned ſorts, deſtroyed by theſe inſects and a ſmall green caterpillar; and in a ſcarce year of fruit, the leaves of Peaches are frequently deſtroyed by them.

The ſhreds taken from trees that have been unnailed in Autumn, ſhould be ſoaked in boiling-hot ſoap-ſuds for three or four days, previous to their being uſed again; this will kill the eggs of earwigs and other inſects that may be depoſited on them.

Of the Ant.

The Ant is very deſtructive to fruit, eſpecially the Peach when ripe; you will frequently ſee theſe inſects travelling all over the trees, and ſometimes the fruit will be filled with them. The beſt method that I have found to deſtroy them is, to get a ſharp-pointed wooden ſtake, or an iron crow, if the ground be hard, and with it bore a hole cloſe to the ſide of the wall, and as deep as the ground will permit. By ſtirring the earth you will ſet the Ants in motion: then work your ſtake or crow round the ſides of the hole, making them as ſmooth as you can; the Ants will come to the mouth of the hole and tumble in, and, by the ſhape of the hole and ſmoothneſs of its ſides, will be prevented from climbing up again. When you ſee a great many in the bottom of the hole pour in ſome water from a watering-pot; and thus you may drown thouſands of them. It is to be obſerved, that there muſt be ſeveral holes made, according to the length of the wall.

This is an eaſy and ſimple way to get rid of Ants. Some are of opinion that they do good, by eating the Aphides from off the trees; but I have always thought that they do much more hurt than good.

You may likewiſe deſtroy many of them by mixing quick-lime with ſoot, and laying it along their roads where you ſee them thickeſt; but where you can come at their neſts, the beſt way is to put a piece of quick lime into it, and pour as much water over the lime as will ſlake it, the heat of which will deſtroy them: when you have poured in the water, cover the lime with a turf or a little earth, which will render it more effectual, by confining the heat. You may ſlake the lime with a mixture of urine and ſoap-ſuds, which will render it ſtill more effectual.

If a little of the powder of ſtaveſacre be laid on the ground round the ſtem of a tree, it will prevent Ants from aſcending it.

Slugs.

Theſe inſects are frequently found harbouring about the foundations of walls, and about the roots of Peaſe, Lettuce, &c. They may be picked off and killed, by putting them into a pot in which is a little fine unſlaked lime; or the ground where they are ſhould be well watered with ſoap-ſuds and urine, mixed with tobacco-water. When they are numerous on the ſurface of the ground, which frequently happens after rain, or in a dewy morning, fine unſlaked lime thrown over the borders, &c. will deſtroy them. But I prefer the above mixture, which, if the ground be well watered with it, will bring them up out of their holes, when they very ſoon die: it will alſo deſtroy their eggs, which they always depoſit in the earth.

Snails.

Snails, during the Winter, gather themſelves together in cluſters: and in that ſeaſon are frequently found in great numbers behind wall-trees, and in holes of the walls. They muſt be

carefully

carefully picked off and cruſhed, which is the only effectual way of getting rid of them. If any ſhould eſcape, they ſhould be deſtroyed as they make their appearance in the Spring. As they alſo depoſit their eggs in the ground, the borders ſhould be well watered, as directed for Slugs.

Of Wasps and Flies.

As ſoon as the waſp and large fleſh fly (which are very deſtructive to all kinds of fruit, particularly Grapes) make their appearance, get ready ſeveral bottles or phials; then mix up grounds of wine, or beer, with ſweepings of ſugar, honey, or grounds of treacle, and with this mixture fill the bottles half or three quarters full, then place ſome of them at the bottom of the wall, and hang a ſufficient number up by a piece of yellow willow, or packthread, on the nails againſt the walls in different places, obſerving to empty them frequently, as they fill with flies and waſps; firſt pour the liquor into an empty bottle, and then ſhake out the dead inſects, cruſhing them with your foot, that none of them may revive: then pour back the liquor into the bottles and phials as at firſt. In this manner you may deſtroy a great many before the fruit becomes ripe. If you begin to hang up the bottles as ſoon as you ſee the fly, which comes much earlier than the waſp, you will be able to deſtroy great numbers of them, and will have the bottles ready for the waſps when they make their appearance. The fly will be found as deſtructive as the waſp to Grapes.

When the weather is hot, and the waſps are numerous, if they do not enter the bottles faſt enough (which will happen when the fruit is very ripe), take a little oil in a cup, and with a feather dipped in it touch their backs, and they will inſtantly drop down; on obſerving, you will find them turned black and green by the effects of the oil *. It is amazing what numbers a diligent perſon can deſtroy in this way in a day. Oil has the ſame effect on flies; but it is very difficult to touch them with it as they are ſo quick in their motions.

Of Birds.

When fruit begins to ripen, Birds will attack it. The beſt preventive in this caſe is, to cover the trees with nets, or buntine, a ſort of cloth of which ſhip's colours are made. Theſe will admit a free circulation of air to the fruit, and will ſoon dry after rain: they will alſo be a good covering for the trees in Spring, in cold, wet, or ſnowy weather.

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* Oil kills inſects by cloſing up the lateral pores by which they breathe.

Rats and Mice.

Theſe vermine do a great deal of miſchief in gardens, in ſheds, and other places, where they frequently deſtroy great quantities of Beans, Peaſe, and other ſeeds; it is, therefore, the intereſt of every gardener to kill as many of them as poſſible.

There are different ways of deſtroying them, by traps, and by poiſon; but I would adviſe never to uſe arſenic, or corroſive ſublimate, for that purpoſe, except under particular circumſtances, as they are deadly poiſon: nux vomica will generally anſwer the end as well, without the danger. In caſe of being accidentally taſted by children or others, it will be attended with no worſe conſequence than leaving a diſagreeable bitter taſte in the mouth; unleſs, indeed, a conſiderable quantity of it be taken, which would, no doubt, prove fatal *; as it is poſſeſſed of a ſtrong narcotic quality, and is found a certain poiſon for dogs and cats, as well as for rats and mice. All domeſtic animals ſhould, therefore, be kept from the places where the poiſon is laid. A very good way to prevent accidents is, to encloſe the traps in caſes, having holes in the ends of them large enough to admit the rats, but ſmall enough to exclude dogs, cats, &c.

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* It has been taken in doſes from five to ten grains twice a day, in intermittents and dyſenteries.

A Bait for Rat-Traps.

Take a pound of good flour, three ounces of treacle, and ſix drops of the oil of carraways; put them all in a diſh, and rub them well together till they are properly mixed; then add a pound of crumb of bread.

Set the traps, baited with ſome of the foregoing mixture, as near their haunts as poſſible; but, for two or three days, ſo as not to fall or ſtrike on the rats going in, and let them have free liberty to go in and out at pleaſure; this will make them fearleſs. Lay ſome of the bait at the rat-holes, and ſcatter a little of it quite up to the traps, and ſo on to the bridge of each trap, where you may lay a handful. It may alſo be proper to ſcent the traps with the following mixture, for the purpoſe of enticing the rats into them.

Take twenty drops of oil of rhodium, ſix or ſeven grains of muſk, and half an ounce of oil of anniſeed; put them in a ſmall phial, and ſhake it well before uſing :—then dip a bit of twiſted paper, or rag, in the mixture, and rub each end of the trap with it, if a box-trap, and put two or three drops on the bridge, leaving the paper or rag in the trap. Of whatever kind the trap is, it ſhould be ſcented: once in a twelvemonth will be ſufficient. Then throw ſome chaff, mixed with a little wheat, about the bottom of the trap, in order to deceive the rats; for they are very ſagacious, and will not enter a ſuſpicious place. This will be neceſſary to be done only at the firſt time of ſetting the traps; for after ſome rats have been caught and have watered and dunged in them, rats will enter boldly when they find others have been there before them; do not, therefore, waſh or clean out the trap, as ſome people do before they ſet it again; but let the dung and urine remain in it. Keep the places where the traps are ſet as private as poſſible; and when you ſet them for catching, mix no bread with the bait, as the rats will in that caſe be apt to carry it away.

When you find the holes quiet, and that no rats uſe them, ſtop them up with the following compoſition. Take a pint of common tar, half an ounce of pearl-aſhes, an ounce of oil of vitriol, and a good handful of common ſalt, mix them all well together, in an old pan or pot. Take ſome pieces of paper, and lay ſome of the above mixture very thick on them, then ſtop the holes well up with them, and build up the mouth of the holes with brick, or ſtone, and mortar: if this be properly done, rats will no more approach theſe, while either ſmell or taſte remains in the compoſition.

To kill Rats in Places where you cannot set Traps.

Take a quart of the bait already deſcribed, then raſp into it three nuts of nux vomica, and add a quarter of a pound of crumb of bread, if there was none before; mix them all well together, and lay it into the mouth of their holes, and in different places where they frequent; but firſt give them of the bait without the nux vomica for three or four ſucceeding nights; and when they find it agrees with them, they will eat that mixed with the nut with greedineſs.

Rats are frequently very troubleſome in ſhores and drains. In ſuch caſes, arſenic may be uſed with ſucceſs, as follows: take ſome dead rats, and having put ſome white arſenic, finely powdered,

dered, into an old pepper-box, ſhake a quantity of it on the foreparts of the dead rats, and put them down the holes, or avenues by the ſides of the ſhores at which they come in; this puts a ſtop to the live ones coming any further; for when they perceive the arſenic they will retire immediately; whereas if you were to put down the dead rats without the arſenic the live ones would eat them.

What has been ſaid relates chiefly to rats; we ſhall now give ſome directions for deſtroying mice.

Take a quart of the bait preſcribed for rats before there is any bread mixed with it; then take four nuts of nux vomica, and raſp them very fine, otherwiſe the mice will pick out the food from it, on account of its bitter taſte; rub them well together; lay ſome of it on a piece of paper, or, if without doors, on a piece of tile, removing all other food from the place, and it will kill all that eat of it. What is not eaten, take away in the morning, and replace it at night. If this be in a garden, ſhelter it with boards, or tiles, that it may not get wet.

I would recommend ſetting fourth-figure traps in gardens: theſe are ſo well known to gardeners, that they need no deſcription. They may be baited with garden Beans.

Traps are alſo made by ſtringing garden beans on a piece of fine pack-thread, as you would ſtring beads, then driving in two ſmall ſtakes at the breadth of a brick from each other, and ſetting up a brick, or ſtone, or a board with a weight on it, inclining to an angle of about forty-five degrees; then tie the ſtring, with the beans on it, round the brick and ſtakes, to ſupport the brick in its inclining poſition, taking care to place all the beans on the under ſide of the brick. The mice in eating the Beans will alſo cut the packthread, and ſo diſengage the brick, or ſtone, which falling on them kills them.

There is nothing new in the foregoing method; but, as field-mice will ſeldom enter a cloſe trap, I thought proper to mention it.

As mice are frequently carried into gardens with ſtraw, or litter, and are there extremely hurtful, deſtroying Beans and Peaſe in Spring, as alſo Lettuces, Melons, and Cucumbers in frames, it is neceſſary to take ſome pains to deſtroy them.

OBSERVATIONS

ON THE

DISEASES, DEFECTS, AND INJURIES,

IN ALL KINDS OF

FRUIT AND FOREST TREES.

INTRODUCTION.

IT redounds very much to the general honour of the Britiſh nation, as well as to the particular credit of the Society for the Encouragement of Arts, Manufactures, and Commerce, and ſeveral other aſſociations for the advancement of Agriculture, &c. that the face of the country has, in the courſe of the preſent century, received ſo much improvement, and ſuch added beauty.

The premiums and honorary marks of diſtinction held forth by theſe ſocieties have excited a ſpirit of emulation, or ſuggeſted a ſpirit of improvement, among perſons of every rank of life, which have been productive of many diſcoveries of no common benefit in their preſent effects, and of great promiſe from their future conſequences, to the community at large.

But, notwithſtanding the ſtrides which modern agriculture has made towards perfection in many points, there is one particular and very intereſting branch of this ſcience which improvement has not yet embraced, viz. the growth of timber, and the culture and management of plantations both of fruit and foreſt trees.

The profeſſion of a gardener has been the employment of my life; and, during a long ſucceſſion of years, it has been an object of my particular ſtudy to inveſtigate and diſcover the latent cauſes of thoſe various defects and diſeaſes to which all kinds of trees are more or leſs ſubject, and the injuries reſulting from them, by obſtructing the fertility of fruit-trees, and diminiſhing the quantity, as well as quality, of timber in foreſt-trees.

Having acquired a competent knowledge of the evil in all its appearances and effects, my attention was directed toward the diſcovery of ſuch a remedy as might not only counteract the progreſs of theſe diſeaſes in fruit and foreſt-trees, but alſo afford nature ſuch powerful aſſiſtance, that ſhe might be enabled to renovate, as it were, fertility in the one, and ſound timber in the other. Of my ſucceſs in theſe endeavours to promote the general advantage of this country in a matter ſo connected with its beſt intereſts, I have that clear conviction which, I truſt, will be hereafter communicated to every part of the kingdom where the application of my experience ſhall be made and proſecuted.

The inquiſitive ſpirit which accompanied my profeſſional purſuits, with the natural deſire of improving my private practice in the management of the various kinds of trees under my care, led me by degrees to this diſcovery. The idea, however, of making it public never occurred to me, till the many trials and experiments that I had repeatedly made, both on fruit and foreſt-trees, in the Royal gardens at Kenſington, had attracted the notice of many perſons of high rank, as well as philoſophical eminence, and prompted them to favour it with a particular examination. Their inveſtigation of my proceſs and method of curing the defects and injuries which, from various cauſes, thoſe trees had ſuſtained, by producing conviction in their minds, gave the moſt flattering encouragement to me. Indeed, the application of the remedy had been attended with ſuch uninterrupted ſucceſs, that its ſalutary and certain effects were evident to every one who favoured it with an attentive obſervation. Many, who viſited me with the moſt decided opinions againſt the ſucceſsful application of any remedy for trees in a very advanced ſtate of decay, did not heſitate, on an inveſtigation of the ſubject, to acknowledge that their prejudices were not only removed, but that their judgments were perfectly convinced of the powerful efficacy of the diſcovery, and the very great advantages which, both in an individual and a national view, might be derived from it.

Among the more early enquirers, were the Commiſſioners appointed by parliament to examine into the ſtate of the woods, foreſts, and land revenues of the crown; who, in the courſe of their ſurveys, had perceived a great number of trees in the Royal foreſts to be materially injured; and their anxiety to prevent the loſs or further damage of ſo much valuable timber induced them to honour me with a letter * concerning the effects of injuries done to oak-trees, and the means of preventing or curing defects in timber from various cauſes therein ſtated.

In reply to this inquiry of the Commiſſioners, I did myſelf the honour of addreſſing them two ſucceſſive letters †.

Shortly after the date of theſe letters, the Commiſſioners favoured me with a viſit at Kenſington, to examine the proceſs and mode of cure which I had adopted, as well as the

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* See No. I. of the Appendix.

† See Nos. II. and III. of the Appendix.

effects which my remedy had produced on trees of various kinds and ages to which it had been applied. Thoſe gentlemen ſeemed, in a moſt particular manner, to intereſt themſelves in aſcertaining the utility and benefit that might ariſe from the application of it to many thouſand valuable trees in his Majeſty's woods and foreſts, which had received injuries of ſuch a kind as, if left to the unaſſiſted efforts of nature, would occaſion a very conſiderable diminution in the value and the quality of the timber, and might even terminate in their entire ruin *.

This very attentive and minute examination of the ſeveral objects of their inquiry being followed

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* Mr. Nichol, of Redbridge, Hants, Purveyor for Portſmouth Dock, informed me, that the average of the damaged timber brought to that place was never leſs than one-fourth of the total quantity of timber brought in annually; and not unfrequently it amounted to a third. If, however, the trees that have received any injuries were prepared, and the Compoſition applied as directed in this Treatiſe, the cavities, or wounds, would be filled up with new and ſound wood. And if recent wounds, occaſioned by lopping, or breaking off branches, were immediately dreſſed in a proper manner with the Compoſition, the tree would ſuſtain no injury; as the wounds would be healed and covered over with new and ſound bark in a ſhort ſpace of time; ſo that there would not be found a foot of damaged timber.

lowed by the cleareſt conviction of the great public utility which would reſult from a general application of the remedy, the Commiſſioners were pleaſed to make a repreſentation of it to the Lords of his Majeſty's Treaſury, under whoſe ſanction it was ſubmitted to the conſideration of the Houſe of Commons by Mr. Roſe, on the 24th of July 1789: and on his motion, an humble Addreſs was preſented by that honourable Houſe to his Majeſty on the ſubject *.

In conſequence of this Addreſs, a Committee of Members of both Houſes of Parliament undertook, at the inſtance of the Lords of the Treaſury, to inveſtigate the efficacy of my Compoſition; for which purpoſe, they moſt attentively examined the ſtate, condition, and progreſs of cure, of the decayed and injured trees in Kenſington gardens, to which it had been applied, in experiments of various kinds, for upwards of ſeven preceding years; and, after having, by a very full enquiry, ſtrict inveſtigation, and the moſt minute attention, ſatisfied their minds in every particular, they reported to the Lords of the Treaſury the reſult of their examination, expreſſing their unanimous opinion and conviction, that "The

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* See No. IV. of the Appendix.

Compoſition was a diſcovery which might be rendered highly beneficial both to individuals and the public." That Report, and alſo a Letter previouſly written to the Committee by the Commiſſioners of the Land Revenue, of which I have been favoured with copies, are, for the further information of the Public, inſerted in the Appendix *.

Having been thus honoured by the unanimous approbation of perſons ſo reſpectable for their rank, character, and knowledge, I proceeded to exert myſelf in making various additional trials and experiments, to enable me to give farther proofs of the efficacy of my Compoſition, in reſtoring the powers of vegetation to trees ſo far decayed as to be of no value as timber, but which, from their ſituation as a ſkreen, or as compoſing part of a general uniform appearance in the Royal gardens, it became a deſirable object to preſerve. Nor were my endeavours leſs ſucceſsful in this ſubordinate experiment, than they had been in thoſe which were directed by circumſtances of ſuperior intereſt; for I had the very great ſatisfaction to find, that, in conſequence of my treatment of trees in that ſtate of decay which has juſt been ſpecified, a few years' growth has

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* See No. V. of the Appendix.

filled up unſightly chaſms, and reſtored that uniformity to their local poſition, which young plants ſet in their places would not have accompliſhed in a long courſe of ſucceſſive years.

The Report of the Committee having been laid before his Majeſty, in conſideration of the great utility and advantage which muſt ariſe to the country at large from the uſe of this Compoſition, his Majeſty was moſt graciouſly pleaſed to order a reward to be given to the author, for making known to the public the materials of which it is compoſed, with the method of preparing it, as well as the mode of its application; and, in order to diffuſe the benefits of this diſcovery throughout the kingdom, an advertiſement * has been inſerted in the London Gazette, and in moſt of the town and country newſpapers.

The very great importance to this country of ſecuring a continued ſucceſſion of good, healthy, and well-growing foreſt-trees, producing ſound, unblemiſhed timber, for ſupplying the various wants of the public, muſt be evident to every man's reflection; nor need it be obſerved, that numberleſs large trees, in the woods, parks, and foreſts, of this kingdom, are, from various cauſes, rendered unfit for uſe, and the timber

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* See No. VI. of the Appendix.

ſo much damaged as to occaſion a conſiderable diminution in its value. This evil ariſes, in ſome inſtances, from unſkilful management, and in others from external accidents; among which are, the ruinous effects of hurricanes and high winds, when the trees are generally left, in their wounded and disfigured ſtate, to the accelerated operations of inevitable decay. It alſo not unfrequently happens, that the heirs of large eſtates, on coming to the poſſeſſion of them, order great numbers of trees to be promiſcuouſly felled, before they have attained a ſtate of maturity, without paying the leaſt attention to provide a ſucceſſion of young trees to ſupply their place; by ſuch inexcuſable negligence defeating the ends propoſed by the provident care and wiſdom of their anceſtors, depriving the public of a valuable ſource of timber, either for domeſtic purpoſes or national uſe, and reducing their country to a dependance on foreign produce for ſupplying the demands of her fleets and manufactures.

I ſhall eſteem myſelf moſt happy, if, in giving this tribute of information to the general ſtock of public improvement, I ſhould promote an influence that may excite noblemen and gentlemen, and proprietors of land of every denomination throughout the kingdom, to be actively ſolicitous in planting and preſerving oak-timber, the native growth of their country; that Great Britain may never be under the dangerous as well as diſagreeable neceſſity of truſting the ſafety of her ſeamen to the inferior texture and leſs durable quality of foreign growths; while the hardy oaks of England, which for ages paſt have been conſidered as affording the beſt timber in the world for this building, and may have been ſaid to have brought home victory and commerce from every part of the globe, are no longer ſuffered to diminiſh, as they have done of late, to the manifeſt detriment and diſhonour of our country.

Such an evil (and it is of no common magnitude) proceeds from the negligence and inattention of the landed men, who, from a ſpirit of patriotic ambition, as well as private intereſt, ſhould pay a very vigilant attention to the maintaining of a ſucceſſion of healthy, well-growing timber, for the ſervice of their country, nor any longer ſuffer the internal reſources of the kingdom to fail in furniſhing materials for that great national object, the ſupport of the Britiſh navy; as well as for the many various demands of domeſtic utility. By making ſuch a proviſion for the public wants, they will add to their own immediate wealth, as well as to the fortunes of thoſe who come after them: and, while I expreſs my wiſhes that ſuch general good deſigns may be put in univerſal practice, I may expreſs my belief, that the diſcovery which I have made, and which is now divulged to the public *, will facilitate the means of proſecuting them, to the eſſential advantage of the Britiſh Empire.

General Observations on the Diseases, Defects, and Injuries, of all Kinds of Fruit and Forest Trees.

In the courſe of more than thirty years practice in cultivating, pruning, and keeping of garden fruit-trees, I have obſerved, that, from natural cauſes, accidents, and unſkilful management, they were ſubject to injuries of different kinds, which always diminiſhed their fertility, and frequently rendered them wholly unproductive.

All trees that bear ſtone-fruit are liable to emit a gum which, by producing a canker, proves fatal to the health and vegetation of the tree. Moſt foreſt-trees are alſo liable to what is called a bleeding, which proceeds from any injuries that obſtruct the circulation of the juices.

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* See Nos. VI. and VII. of the Appendix.

Of thoſe which ſuffer from bad management or accidents, ſome are injured by unſkilful pruning, and lopping at improper ſeaſons of the year; and others by the violence of high winds, having boughs or limbs torn from their bodies; which being left in that ſtate, expoſed to all the inclemency of hard froſts, are often cracked or rent in the wood; or from heavy and ſoaking rains, the wounds imbibe ſo large a quantity of wet and moiſture, as, by cauſing a fermentation with the natural juices, brings on diſeaſe, and in time deſtroys the health and vegetation of the tree. Theſe, among other cauſes, tend to produce decay and barrenneſs in fruit-trees, as well as defects in timber, to the great loſs of the public in general, as well as eſſential injury to the individual proprietor.

To remove theſe evils, and to prevent the ill conſequences ariſing from the cauſes already deſcribed, I ſubmit to the experience of the public a remedy diſcovered by myſelf, which has been applied with never-failing ſucceſs to all kinds of fruit-trees, and has not only prevented further decay, but actually reſtored vegetation and increaſed fruitfulneſs, even in ſuch as were apparently barren and decayed. It has produced alſo a ſimilar effect on foreſt-trees, by reſtoring them to ſoundneſs of timber and healthful vegetation, and covering, as it were,

viſible

viſible nakedneſs and increaſing decay, with freſh and vigorous foliage.

This remedy is a Compoſition formerly applied in the manner of a plaſter, but now in a liquid ſtate, and laid over the wounded or injured part of the tree with a painter's bruſh: it is of a ſoft and healing nature; poſſeſſes an abſorbent and adheſive quality; and, by reſiſting the force of waſhing rains, the contraction of nipping froſts, and the effects of a warm ſun or drying winds, excludes the pernicious influence of a changeable atmoſphere.

The diſcovery of it is the reſult of much reflection and ſtudy during a long courſe of years, and of a great variety of experiments, made, at a very conſiderable expence, to aſcertain the efficacious powers of the application. Nor ſhall I heſitate a moment to declare my firm belief, that wherever it ſhall be properly applied by the proprietors of gardens, orchards, and woods, it will be productive of all the advantage that can be derived from reſtoring as well as preſerving vigour and fertility in all kinds of fruit-trees; as alſo from preventing decay, and promoting health and ſound timber, in every ſpecies of foreſt-trees: and how great that advantage may be, it is in the capacity of every one to determine.

On the Management of Forest Trees.

The received opinion and common practice of moſt profeſſional men has been, to prune or lop their trees, from the month of October, when the juices have been exhauſted by the Summer foliage, autumnal fruit, and general nouriſhment of the body of the tree, until the month of March, when the ſap or juices, re-invigorated by nature during the Winter's repoſe, begin to re-aſcend and perform the annual function of cloathing it with freſh foliage, bloſſoms, and fruit. The reaſon of this practice is, that, the ſap being fallen at that ſeaſon of the year, it has been conſidered as the moſt proper period to lop off all ſuperfluous growths; and the efforts of nature to heal the wounds thus neceſſarily given (before the riſing of the ſap in the following Spring) have been judged beſt for the ſafety and health of the tree. The danger of performing this ſervice when the juices are in a more vigorous flow, as in the months of May, June, and July, has been dreaded, from a fear of its occaſioning a waſte of the nutritive juices, diſcharging themſelves through the wound, to the impoveriſhment and injury, if not the ruin, of the tree.

The pruning of fruit-trees and the lopping off large branches from foreſt-trees during the Winter ſeaſon, has alſo been frequently attended with great hurt and impediment to their health and vegetation; the wounds being expoſed to all the rigours of an inclement ſeaſon, and thereby contracting thoſe diſeaſes which contain the principles of decay. Hence it is that ſuch numbers of foreſt-trees are continually injured in their value for public uſes, either by unſkilful management or purpoſed depredation, or by the violence of boiſterous winds, when, their limbs and branches being torn off, the trees are left in that unprotected ſtate to imbibe the ſeeds of decay and rottenneſs, which will in time pervade their very heart, and render them unfit for any of thoſe valuable purpoſes for which nature, by their frame and texture, appears to have deſigned them.

It may alſo be obſerved, that where branches have been cut off from the body of the tree, even at the diſtance of two or more feet from the trunk, with a view to prevent injury to the timber, even that method has not been found effectual to ſave the tree from very material detriment; as the remaining ſtem of the branch ſo cut away, dying ſoon after, becomes a ready conduit for conveying pernicious moiſture and diſeaſe to that part of the tree with which it is connected; and ſo on, in time, to the whole.

The practice of others, in lopping their trees cloſe to the trunk, and dreſſing the part ſmooth and even, has leſs objections than the former; nevertheleſs, even according to this method, the tree is liable to injury. The effort of nature to heal the wounds thus given diſcovers itſelf by encircling the wound with a kind of callus, or lip, which, increaſing in ſize, and ſwelling out from the annual flow of the juices, forms a hollow or cavity of the central part, where the rain or ſnow is very apt to lodge; and penetrating between the bark and the wood, dried and cracked by a hard froſt or a warm ſun, promotes that fermentation with the natural juices, which is the certain ſource of diſeaſe and decay.

Young, healthful, and vigorous trees, when they have been injured by being wantonly cut through the bark, or from other cauſes, will ſometimes recover themſelves, and, to all outward appearance, be reſtored to their original ſoundneſs; but when cut into planks and boards, internal blemiſhes and faults are diſcovered in them, which appear to have been occaſioned by the early injuries which the tree had received; the texture of the wood not uniting where the wound was originally given; though, from the youthful vigour of nature, the bark has cloſed, and an external cure been evidently performed.

As a moſt efficacious remedy to prevent the evils that I have deſcribed, with all their deſtructive conſequences, and to reſtore ſound timber where the ſymptoms of decay are already apparent, I confidently recommend the uſe of my Compoſition, which, being applied in a proper manner to the wounded or injured part, will infallibly prevent the bleeding of trees, or the oozing of juices through the wounds of limbs or branches that have been cut off in the middle of Summer, when they are in their higheſt vigour, and moſt rapid flow of vegetation: by which means, any waſteful diſcharge of the juices is prevented, and they are duly confined to their natural operations of giving nouriſhment, growth, and fertility, to their reſpective bodies.

By employing the propoſed remedy, trees of all kinds whether in gardens or orchards, in parks or foreſts, may with greater ſafety and advantage be pruned or lopped in the Spring, or early in the Summer, than in the Winter ſeaſon; as the Compoſition, when properly applied, repels the flow of the juices through the wound, cauſes a more active vegetation, and aſſiſts nature more powerfully in healing the wound at the time the ſap is in full vigour, than when it is on the decline, as in Autumn and Winter.

It is alſo neceſſary to remark, that both fruit and foreſt trees (particularly thoſe which grow in the ſhade) are very liable to be affected with diſorders proceeding from the growth of liverwort, and various kinds of moſs, that adhere to the outer bark of the tree, and frequently gain a conſiderable thickneſs, that not only prevents the natural flow of the juices, but cauſes a ſtagnation in the circulation, and brings on decay; which, after deſtroying the outer bark, penetrates, by degrees, deeper into the wood. Where this circumſtance is obſerved, care ſhould be taken to clear the whole bark of the tree from theſe growths; and where it is infected, to ſcrape or pare it away. When the body of the tree is thus cleanſed from infection, the Compoſition ſhould be applied, in a liquid ſtate, to the parts ſo cleaned, to cloſe the pores of the wood; when the tree will ſoon acquire a freſh bark, with improved health and vegetation. I am confirmed in theſe opinions by the many experiments and various trials that I have made to aſcertain, by the moſt poſitive proofs, the properties of this Compoſition, before I ventured to offer it to the public attention. Indeed, every year's experience has increaſed my conviction of its general utility, when properly applied to the purpoſes for which it is recommended. To give a more complete illuſtration of its virtues, and to place the advantages ariſing from it in a ſtronger light, I ſhall beg leave to ſtate a few of the very numerous experiments that I have made on the foreſt trees in his Majeſty's Gardens at Kenſington, where the ſalutary effects of the Compoſition are evident to every attentive obſerver.

The firſt trials of its efficacy were made on ſome very large and antient Elms, many of which were in a moſt decayed ſtate, having all their upper parts broken, by high winds, from their trunks, which were withal ſo hollow and decayed, that a ſmall portion alone of the bark remained alive and ſound. Of theſe trees I cut away at firſt a part only of the rotten ſtuff from the hollow of the tree, and then applied the plaſter to the place where the operation had been performed, by way of an internal coat of the Compoſition. In a ſhort time, however, the efforts of nature, with a renovated flow of the juices, were clearly diſcernible in their formation of new wood, uniting with, and ſwelling, as it were, from the old, till it became a ſtrong ſupport to that part of the tree where the Compoſition had been applied. I then cut away more of the rotten wood from the inſide, applying the plaſter in the ſame manner, with the ſame good effects, and continued to uſe the knife in proportion to the acquiſition of new wood; ſo that, from the tops of theſe decayed and naked trunks, ſtems have actually grown of above thirty feet in height, in the courſe of ſix or ſeven years from the firſt application of the Compoſition; an incontrovertible proof of its good effects in reſtoring decayed vegetation.

Many other Elm trees, which had received hurts from bruiſes and other cauſes, and where diſeaſe and decay were already evident, after cutting away all the infected part, and duly applying the plaſter, were ſo completely healed, that the outline of the wound is ſcarcely diſcernible on the bark, and the new wood is as perfectly united to the old, as if it had been originally formed with the tree.

Of Oak-trees alſo, which had received very conſiderable damage from various accidents, as blows, bruiſes, and cutting of deep letters; the rubbing off of the bark by the ends of rollers, or wheels of carts, and mutilated branches, a perfect cure has been made and ſound timber produced. The acidity, or corroſive quality, of the juice of Oak-trees, when obſtructed in their circulation from any of the cauſes already mentioned, and fermenting with the wet and moiſture imbibed by the wounds from the atmoſphere, will bring on diſeaſe, and promote decay: for, notwithſtanding the hard texture of the Oak, when once the principles of decay begin to operate, the acrimonious juices feed the diſeaſe, and accelerate its progreſs, as much, perhaps, as in trees of a ſofter quality and texture; but when the diſeaſed or injured part is entirely cut away to the freſh ſound wood, and the Compoſition properly laid on, as perfect a cure has been made as I have already related in the recovery of Elm-trees. Indeed, when I reflect that the Oak has been the boaſt of our early anceſtors, and the means, under the bleſſing of God, of affording protection and ſafety, as well as acumulating honour and wealth, to the nation, what language can ſufficiently deplore that want of public ſpirit, and that ſtrange inattention to the preſervation and increaſe of this ſtaple tree, which ſuffers ſuch numbers of ſtately Oaks to go to decay; in which diſgraceful ſtate they remain to upbraid their poſſeſſors, as foes to the commerce and naval glory of the kingdom!

Various experiments have alſo been made on other foreſt trees, as aſh, limes, cheſnuts, and ſycamores, that had received the ſeveral injuries to which they are expoſed ; as well as many of the reſinous kinds, ſuch as the cedar of Lebanon, and others of the pine tribe ; in all of which I have experienced a degree of ſucceſs that exceeded my moſt ſanguine expectations.

As I feel a ſtrong ſolicitude to render my experiments of the moſt extenſive advantage to the community, and in particular to the proprietors of landed eſtates throughout the kingdom, I beg leave to recommend to their particular attention, that all foreſt trees, whether felled with a ſaw or an axe, may be cut near to the ground ; at the ſame time carefully preſerving the ſtump and roots from any further injury. The ſurface ſhould then be made quite ſmooth, when the Compoſition may be ſpread over the whole ſurface according to the directions already given. It ſhould, however, be obſerved, that the Compoſition, when employed for this particular purpoſe, ſhould have an equal quantity of the powder of alabaſter mixed with the dry powder generally directed to be uſed after the Compoſition is laid on, in order to render the ſurface harder, and of courſe better able to reſiſt the bad effects of the dripping of trees, of rain, froſt, and ſnow. But this addition is by no means neceſſary in the uſual application to the ſides of trees.

In conſequence of this proceſs, the vigour of the roots will operate ſo powerfully in the courſe of the ſucceeding Spring, that a conſiderable number of buds or branches will ſhoot forth round the ſtump, which, with proper care and attention, may be trained to many valuable purpoſes, either ſtraight or crooked, for knee-timber, or other uſes: and, by retaining only ſo many of theſe ſhoots as are deſigned to grow for any particular intention, more than one half will be ſaved, in point of time, according to the proportions of common growth: for, if a young tree be planted in a ſoil equal in quality to the ſite of the old ſtump, the ſhoot growing from the latter will, in eight or ten years, attain to a ſize which the ſingle plant will hardly acquire in twice that period. There are alſo many uſeful purpoſes of huſbandry, as hop-poles, and other poles uſed on various occaſions, for which a number of ſhoots may be trained from one ſtump, whoſe fertile juices will ſhortly rear a healthy and numerous offspring around it. Very particular attention, however, ſhould be paid to regulate their number, according to the ſize and vigour

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of the ſtump. It would certainly be proper to leave more of them at firſt than are intended to be reſerved for final uſe, in order to draw up the ſap: if too few are left, they will be liable to burſt, from the ſuperabundant flow of the juices from the old ſtock: to prevent which inconvenience, they ſhould be cut away by degrees, always applying the Compoſition as they are cut, and leaving the fineſt ſtem to produce the new tree, which will, in time, cover the old ſtump, and leave nothing but a faint kind of cicatrix at the junction of the old and new part of the tree.

It is needleſs for me to inſiſt on the great advantages which land-proprietors and farmers will derive from this method of managing their woods and coppice grounds, wherever they may be. In many counties of England, coppice, or underwood, is an article in very great demand for charcoal, common fuel, or the purpoſes of particular manufactories, as well as to furniſh a variety of articles for huſbandry and domeſtic convenience.

It would be equally unneceſſary to enlarge on what muſt be ſo evident to the moſt ordinary underſtanding, the great national advantage which may be derived from the uſe of this Compoſition, by preſerving and increaſing the native ſupplies of our country for the ſupport of that navy which is to protect it. Nor need I urge to the man of taſte, and the lover of landſcape beauty, what a uſeful help it may afford to the delightful modern art of ornamental horticulture.

APPENDIX.

APPENDIX.

N° I.

Land Revenue Office, April 17, 1789.

SIR,

BEING informed that you have diſcovered a method of curing defects in growing trees of all ages, which may have ſuſtained damage from any cauſe whatever, we wiſh to be favoured by you with an anſwer to the following queſtions, relative to injuries done to the bark of Oak-trees, and the means of preventing defects in the timber ariſing from that cauſe, *viz.*

1. Suppoſing a piece of bark of five or ſix inches ſquare to be cut from the ſide of an Oak-tree of any ſize, from twenty feet to one load or more, ſo as to lay the wood bare, and that letters or figures were burnt, or ſtamped with ſharp inſtruments, into ſolid wood, where the bark was ſo taken off, and the tree left in that ſtate ſo long as it ſhould continue ſtanding, what effect

do you think would be produced by ſuch proceſs upon the body of the tree; whether it would continue to grow, and increaſe in ſize in the part from which the bark was taken; or whether any, and what detriment would enſue from it to the timber, if no means were uſed to prevent it; and whether ſuch detriment, if any, would extend further than the limits of the part deprived of its bark?

2. If you ſhould be of opinion that Oak-trees would ſuſtain any material detriment, or become in any degree defective, from the cauſe above ſtated, do you know any means by which ſuch detriment may be effectually prevented, in trees which have remained in that ſtate from four, five, or ſix months to a year; ſo as to reſtore the bark, and prevent the trees from becoming defective, and unfit for the uſe of the navy?

3. If you ſhould be able to ſuggeſt a complete remedy for ſuch defects, and if the remedy would be effected by means peculiar to yourſelf, and unknown to others, we wiſh to know if you would be willing to undertake to apply it, or ſuperintend or direct the application of it by perſons properly inſtructed by yourſelf, to any number of trees that might require it in any of the royal foreſts?

4. In caſe there ſhould be occaſion to apply ſuch a remedy to a very conſiderable number of trees in the ſtate above deſcribed, we wiſh to know, as nearly as poſſible, what expence the application would be attended with, by the hundred, or thouſand, or any given number of trees, including labour, materials, and every incidental expence.

We ſhall be glad to receive an anſwer to theſe enquiries with all convenient ſpeed, and are,

Sir,

Your moſt obedient Servants,

JOHN CALL,
JOHN FORDYCE.

Mr. Forsyth.

N° II.

To the Honourable the Commiſsioners of the Land Revenue.

Royal Gardens, Kenſington, April 24, 1789.

HONOURED SIRS,

TO the letter you have been pleaſed to honour me with, I beg in general to ſay, that, from many years attention to fruit and foreſt trees, I have obſerved every wound, bruiſe, or injury; even the wanton cutting of the initials of a name on the bark of a tree has been attended with miſchief, and often brought on the deſtruction of the tree, eſpecially if old. In particular I beg to ſay, that, if a tree be young, Nature will exert herſelf to recover from the injury; but, if the tree be old, it will ceaſe to grow about the injured part, will not increaſe in ſize, the wound will daily increaſe, and in time deſtroy all the timber of the tree.

In anſwer to the ſecond queſtion, I beg to ſay, that Oak-trees are equally liable to decay and detriment, as all other trees, though their decay will be proportionably ſlow, as they are leſs porous than many other trees of our iſland; though I ſhould add, that after oak-trees are ſo far decayed as to hold water, their decay is as rapid as moſt other trees. In anſwer to the queſtion, "Do you know any means by which ſuch detriment may be effectually prevented?" I beg to ſay, that after many years cloſe application, and ſtrictly critical obſervation, I am fully convinced, that upon the exciſion of the decayed part, and the application of a Compoſition, it is poſſible to heal any wounded tree, and even to reſtore it to its former health, if there be only an inch or two of bark remaining to carry on the circulation of the vegetable economy. This is no theory, but is demonſtrated by a great variety of experiments on fruit and foreſt trees in his Majeſty's Gardens at Kenſington, now under my care; and which trees, upon examination, have convinced all thoſe who viewed them of the practicability of producing the fineſt, cleaneſt, and moſt prolific branches from ſtumps in a ſtate of decay: and with confidence I can aſſert, that I have ſucceeded ſo well with his Majeſty's fruit-trees, that by cutting out the diſeaſed and dead wood, the trees have produced more and finer fruit in two and three years than a tree newly planted will in thirteen or fourteen years; and this advantageous circumſtance is equally viſible in the experiments I have made on Elms, where nothing remained but the bark. The Oak, from experience, I find equally as curable as any other tree; the bark may be reſtored, and the trees rendered as fit for the navy, as though they never had been injured.

In anſwer to the third queſtion, I ſay that I am able to "ſuggeſt a complete remedy for the defects;" and that remedy I ſuppoſe to be known only to myſelf, as it is not a ſecret drawn from books, or learned from men, but the effect of cloſe application, and repeated experiments. As to undertaking the application of the remedy, I muſt requeſt you will have the goodneſs to permit me to ſay, that as a ſervant of his Majeſty I do not think myſelf at liberty to form any engagement that muſt inevitably call me for a time from his Majeſty's ſervice in his Royal Gardens at Kenſington; but ſhould his Majeſty be graciouſly pleaſed to think my ſervices would be productive of a national good, and will condeſcend to permit me to be abſent, I ſhall with the greateſt pleaſure and alacrity engage in the undertaking.

I beg permiſſion to lay before your Honourable Board ſeveral ſpecimens of parts of trees which have been injured in a manner ſimilar to thoſe you have alluded to; others which have been healed by the method I have before mentioned. But the moſt effectual means of demonſtrating the utility of this application, is the many fruit and foreſt trees now growing in his Majeſty's Royal Gardens at Kenſington, which I ſhall be happy to ſhew you.

Your Honourable Board, conſidering the ſhortneſs of time, will, I truſt, make every allowance for any inaccuracy in this anſwer to the letter you favoured me with, and permit me to ſubſcribe myſelf,

With the greateſt reſpect,
Your moſt obedient,
Humble Servant,
WILLIAM FORSYTH.

To the Honourable the
Commissioners of the Land Revenue.

Land Revenue Office, April 25, 1789.

SIR,

WE have received your letter of yeſterday's date, which contains a very clear and ſatisfactory anſwer to our enquiries reſpecting the effects of injuries done to the bark of Oak-trees, and the means of prventing damage to the timber from that cauſe; and the ſpecimens ſent with your letter afford the moſt convincing proofs both of the deſtructive conſequences ariſing from even ſlight injuries to the bark, when no means are uſed to prevent them, and of the efficacy of your diſcovery for preventing and curing defects in timber proceeding from that ſource: but we obſerve that you have not given an anſwer to our enquiry as to the expence which the application of the remedy you have diſcovered would be attended with, by the hundred, or thouſand, or any given number of trees, in caſe there ſhould be occaſion to apply it to a very conſiderable number: we therefore repeat our requeſt, that you will be ſo good as to inform us, as nearly as you can, whereabouts would be the expence of ſuch application, including labour, materials, and all incidental charges; but excluſive of any reward to yourſelf for diſcloſing the Compoſition for the benefit of the public, which we conceive ſhould be given ſeparately.

We are, Sir,
Your moſt obedient Servants,
JOHN CALL.
JOHN FORDYCE.

Mr. William Forsyth.

Nº III.

To the Honourable the Commissioners of the Land Revenue.

Royal Gardens, Kensington, April 28, 1789.

HONOURED SIRS,

I PRESUME I need not again aſſign the reaſon why I omitted in my former letter mentioning the expence which will be incurred by cutting out the injured parts of the trees, and the application of my Compoſition. I have endeavoured to think of every probable charge that will accrue; and, upon an accurate calculation, am convinced it will not exceed ſixpence per tree. It may not be improper here to obſerve, that this calculation includes the labour of the men for the operation; the Compoſition, and the application of it; and alſo an after review, that the healing of the trees is going on well; but I ſhould alſo obſerve, that in this expence I have not put down any thing for myſelf, leaving that wholly and altogether to your further conſideration.

I am, honoured Sirs,
With great reſpect,
Your moſt obedient,
Humble Servant,
WILLIAM FORSYTH.

N° IV.

July 24, 1789.

RESOLVED,

THAT an humble Addreſs be preſented to his Majeſty, that he will be graciouſly pleaſed to give directions for making ſuch enquiries as ſhall be thought neceſſary for the purpoſe of aſcertaining the efficacy of a remedy invented by William Forſyth, for curing defects in trees, ariſing from injuries in the bark; and in caſe the ſame ſhall appear likely to be of public utility, to order ſuch recompence to be made to the ſaid William Forſyth, on the diſcloſure thereof, as his Majeſty ſhall judge proper; and to aſſure his Majeſty, that this Houſe will make good the ſame.

N° V.

Land Revenue Office, Scotland Yard,
Dec. 11, 1790.

MY LORDS AND GENTLEMEN,

HAVING repreſented to the Lords Commiſſioners of his Majeſty's Treaſury, that, in purſuance of their Lordſhips deſire, we had written to the ſeveral noblemen and gentlemen mentioned in the liſt, of which a copy was ſent to each of you, requeſting to know whether they would have the goodneſs to make the neceſſary examinations and enquiries, to aſcertain the effect of the experiments made by Mr. Forſyth, of the Compoſition diſcovered by him for curing defects in trees; and that twelve of thoſe noblemen and gentlemen, hereunder named, and to whom this letter is addreſſed, had ſignified their willingneſs to aſſiſt in the propoſed examination; we have now the honour to inform you, that their Lordſhips have been pleaſed to ſignify to us, that they approve of the examination being made by thoſe noblemen and gentlemen, or any ſeven or more of them; and to requeſt that you will be pleaſed to take ſuch ſteps as you ſhall think neceſſary, for aſcertaining the efficacy of the ſaid Compoſition for curing injuries and defects in trees, and to addreſs the reſult of your examination to the Lords of the Treaſury.

Among the uſes to which the Compoſition in queſtion is ſaid to be applicable, that which appears to us more immediately connected with the objects referred by Parliament to our conſideration, is, the cure of injuries and defects in foreſt trees, eſpecially the Oak: and we beg leave particularly to recommend it to you to examine,

Whether the Compoſition appears to be efficacious for the purpoſe of reſtoring the bark of an Oak-tree which has been either cut or accidentally torn off, ſo as to prevent ſuch injuries or defects in the timber as are commonly found to proceed from that cauſe;

And whether the application of the Compoſition to the parts of foreſt-trees where limbs or branches have been cut or torn off, appears to be efficacious for the preventing or curing injuries and defects in timber, proceeding from that cauſe?

We preſume, with great deference, that you will think it proper to point out any other uſes to which the Compoſition may appear to you to be applicable, with advantage to the public; and we requeſt that you will be pleaſed to favour us with a copy of your reſolutions, or report, to the Treaſury thereon.

We have the honour to be,
My Lords and Gentlemen,
Your moſt obedient humble Servants,

CHARLES MIDDLETON,
JOHN CALL.
JOHN FORDYCE,

The Marquis of Abercorn.
Earl of Upper Ossory.
Lord Viscount Barrington.
Lord Frederick Campbell.
Sir George Yonge, Bart. K. B.
John Rolle, Esq.
Philip Stephens, Esq.
C. M. Pierrepont, Esq.
William Pulteney, Esq.
Robert Barclay, Esq.
Hans Sloane, Esq.
William Mainwaring, Esq.

To the Lords Commissioners of his Majesty's Treasury.

My Lords,

HAVING met on Saturday, at Kenſington, in compliance with the deſires of your Lordſhips, communicated to us by the Commiſſioners of the Land Revenue, we endeavoured to take every meaſure for the inveſtigation requeſted of us that the time and circumſtances permitted; and we conceive that the beſt and moſt ſatisfactory mode of reporting to your Lordſhips the reſult of that inveſtigation will be, to ſpecify, as ſhortly as may be, the ſteps we took; the obſervations we made; and our opinions, founded both upon what we ourſelves ſaw, and upon ſuch documents as appeared to us authentic and convincing.

After referring to the laſt letter addreſſed to us by the Commiſſioners, in order that we might keep in view, as much as poſſible, the objects more particularly recommended to our attention, we proceeded firſt to read a ſtatement by Mr. Forſyth of the properties of his Compoſition, and then to inſpect and examine the various ſpecimens and documents laid before us by him, tending to prove and illuſtrate thoſe properties.

Our inveſtigation, thus far, having proved as ſatisfactory as the nature of it admitted, we thought it right to require Mr. Forſyth to ſhew us ſuch trees in Kenſington Gardens as (having been injured or decayed by whatever cauſe) had been benefited by the application of this Compoſition; and we deſired him to ſhew us what ſpecimens he could of ſuch trees in all the ſtages of their amendment and recovery. In conſequence of this requiſition, we were conducted to many foreſt-trees of different kinds, (viz. Elms, Limes, and Horſe-Cheſnuts) in which holes and wounds, in ſome inſtances ſeveral feet in length, and of a conſiderable width and depth, had been completely filled up with ſound wood, ſo as the outline of the wound remained barely diſcernible in the bark. We examined many others in an evident ſtate of progreſs towards a ſimilar cure, and we could not diſcover any one of the experiments that fell under our obſervation, of which we had the leaſt reaſon to doubt the ſucceſs. We examined alſo ſeveral experiments upon trees which, ſtanding near each other, had been cut down, and to the ſtems of which the Compoſition had been applied, while the others had been left to nature: the uniform reſult of theſe experiments appeared, that thoſe ſtems to which the Compoſition had been applied had ſhot up into healthy vigorous trees, in far leſs time than we ſhould have conceived poſſible: while thoſe, left to unaſſiſted nature, had only produced irregular, unhealthy ſhoots, and were apparently in a ſtate of decay. Several experiments had alſo been made on decayed and hollow ſtumps (where little or nothing but bark remained) of Elms of very conſiderable ſize and age: from theſe ſtumps, by the application of the Compoſition, healthy trees have iſſued, which have, in the ſpace of five, ſix, ſeven, or eight years, attained to a ſize and height which it appears to us that trees ſown or planted ſeldom attain to in thrice the time. With a view to aſcertain, as far as was in our power, the quality of that wood which by the application of the Compoſition had been formed in the decayed and injured parts of trees, we cut pieces of it out, and compared them with other pieces cut out of the original wood of the ſame trees, and, after as accurate a ſecreting and compariſon as we were enabled to make, we could not diſcover any difference either in the colour or texture.

Upon our obſerving to Mr. Forſyth, that we had not yet ſeen any ſpecimens of the opera-

tions

tions of his Compoſition upon Oak-trees, he informed us, that, having at firſt confined his experiments to other trees, which were in a ſtate of greater decay, he had none of the ſame date (viz. from two to eight years) to ſhew us, but that we might ſee many ſpecimens, of near two years ſtanding, equal in their progreſs to the reſt: accordingly we examined various experiments upon Oaks; of which the progreſſive ſtate was ſo perfectly ſimilar to that of the other ſpecies of trees, that we ſhould not be juſtified in any doubt upon that head; the event, alſo, of comparing the new wood with the old was the ſame.

To report at large our obſervations upon the effects of the Compoſition applied to different fruit-trees, would be little more than a repetition of what we have already ſaid; the time of the year would only allow us to remark the rapid growth of the branches and ſhoots wherever the Compoſition had been applied to the moſt decayed and injured ſtems.

We deem it unneceſſary to enter into any detail of the collateral information and documents which confirmed the impreſſions reſulting from our perſonal obſervations, perſuaded that your Lordſhips will believe we omitted no means in our power to form our judgments.

We will therefore only add, that, from all we ſaw and heard, we have reaſon to believe, and conſequently do not heſitate to expreſs our conviction, that Mr. Forſyth's Compoſition is a diſcovery which may be highly beneficial both to individuals and the public.

We have the honour to be
Your Lordſhip's obedient Servants,

ABERCORN.
FREDERICK CAMPBELL.
WILLIAM PULTENEY.
CHARLES PIERREPONT.
HANS SLOANE.
GEORGE YONGE.
PHILIP STEPHENS.
ROBERT BARCLAY.
JOHN ROLLE.
WILLm. MAINWARING.

N° VI.

IN conſequence of an Addreſs of the Houſe of Commons to his Majeſty, and of an examination made by

THE MARQUIS OF ABERCORN.
LORD FREDERICK CAMPBELL.
WILLIAM PULTENEY ESQ.
CHARLES PIERREPONT, ESQ.
HANS SLOANE, ESQ.
SIR GEORGE YONGE, BART.
PHILIP STEPHENS, ESQ.
ROBERT BARCLAY, ESQ.
JOHN ROLLE, ESQ. AND
WILLIAM MAINWARING, ESQ.

and their report to the Lords Commiſſioners of his Majeſty's Treaſury, reſpecting the efficacy of a Compoſition diſcovered by Mr. William Forſyth, for curing injuries and defects in trees, his Majeſty has been pleaſed to grant a reward to Mr. Forſyth, for diſcloſing the method of making and uſing that Compoſition; and the following directions for that purpoſe are publiſhed accordingly:

Royal Gardens, Kensington, May 11, 1791.

Directions for making a Compoſition for curing Diseaſes, Defects, and Injuries, in all Kinds of Fruit and Forest Trees, and the Method of preparing the Trees and laying on the Compoſition, by WILLIAM FORSYTH.

TAKE one buſhel of freſh cow-dung, half a buſhel of lime-rubbiſh of old buildings (that from the cielings of rooms is preferable), half a buſhel of wood aſhes, and a ſixteenth part of a buſhel of pit or river ſand: the three laſt articles are to be ſifted fine before they are mixed; then work them well together with a ſpade, and afterwards with a wooden beater, until the ſtuff is very ſmooth, like fine plaſter uſed for the cielings of rooms.

The Compoſition being thus made, care muſt be taken to prepare the tree properly for its application, by cutting away all the dead, decayed, and injured part, till you come to the freſh, ſound wood, leaving the ſurface of the wood very ſmooth, and rounding off the edges of the bark with a draw-knife, or other inſtrument,

ment, perfectly ſmooth, which muſt be particularly attended to; then lay on the plaſter about one eighth of an inch thick, all over the part where the wood or bark has been ſo cut away, finiſhing off the edges as thin as poſſible: then take a quantity of dry powder of wood-aſhes mixed with a ſixth part of the ſame quantity of the aſhes of burnt bones; put it into a tin box, with holes in the top, and ſhake the powder on the ſurface of the plaſter, till the whole is covered over with it, letting it remain for half an hour, to abſorb the moiſture; then apply more powder, rubbing it on gently with the hand, and repeating the application of the powder till the whole plaſter becomes a dry ſmooth ſurface.

All trees cut down near the ground ſhould have the ſurface made quite ſmooth, rounding it off in a ſmall degree, as before mentioned; and the dry powder directed to be uſed afterwards ſhould have an equal quantity of powder of alabaſter mixed with it, in order the better to reſiſt the dripping of trees and heavy rains.

If any of the Compoſition be left for a future occaſion, it ſhould be kept in a tub, or other veſſel, and urine of any kind poured on it, ſo as to cover the ſurface; otherwiſe the atmoſphere will greatly hurt the efficacy of the application.

Where lime-rubbiſh of old buildings cannot be eaſily got, take pounded chalk, or common lime, after having been ſlaked a month at leaſt.

As the growth of the tree will gradually affect the plaſter, by raiſing up its edges next the bark, care ſhould be taken, where that happens, to rub it over with the finger when occaſion may require (which is beſt done when moiſtened by rain), that the plaſter may be kept whole, to prevent the air and wet from penetrating into the wound.

WILLIAM FORSYTH.

William Forſyth, of Kenſington, in the county of Middleſex, Gardener, maketh oath, and ſaith, that the foregoing is a true account of the method of making and uſing the Compoſition diſcovered by him for curing diſeaſes, defects, and injuries, in fruit and foreſt trees; and which Compoſition was applied by him to the trees in his Majeſty's Gardens at Kenſington, ſhewn to the noblemen and gentlemen to whom it was referred to examine the efficacy of the ſaid Compoſition.

WILLIAM FORSYTH.

Sworn at the Land Revenue Office, in Scotland Yard, the Eleventh Day of May, 1791, before Us,

CHARLES MIDDLETON.
JOHN CALL.
JOHN FORDYCE.

Nº VII.

Additional Directions for making and using the Composition.

TO the foregoing directions for making and applying the Compoſition, it is neceſſary to add the following.

As the beſt way of uſing the Compoſition is found, by experience, to be in a liquid ſtate; it muſt, therefore, be reduced to the conſiſtence of pretty thick paint, by mixing it up with a ſufficient quantity of urine and ſoapſuds, and laid on with a painter's bruſh. The powder of wood-aſhes and burnt bones is to be applied as before directed, patting it down with the hand.

When trees are become hollow, you muſt ſcoop out all the rotten, looſe, and dead parts of the trunk till you come to the ſolid wood, leaving the ſurface ſmooth; then cover the hollow, and every part where the canker has been cut out, or branches lopped off, with the Compoſition; and, as the edges grow, take care not to let the new wood come in contact with the dead, part of which it may be ſometimes neceſſary to leave; but cut out the old dead wood as the new advances, keeping a hollow between them, to allow the new wood room to extend itſelf, and thereby fill up the cavity, which it will do in time, ſo as to make as it were a new tree. If the cavity be large, you may cut away as much at one operation as will be ſufficient for three years. But in this you are to be guided by the ſize of the wound, and other circumſtances. When the new wood, advancing from both ſides of the wound, has almoſt met, cut off the bark from both the edges, that the ſolid wood may join, which, if properly managed, it will do, leaving only a ſlight ſeam in the bark. If the tree be very much decayed, do not cut away all the dead wood at once, which would weaken the tree too much, if a ſtandard, and endanger its being blown down by the wind. It will, therefore, be neceſſary to leave part of the dead wood, at firſt, to ſtrengthen the tree, and to cut it out by degrees as the new wood is formed. If there be any canker, or gum oozing, the infected parts muſt be pared off, or cut out with a proper inſtrument. When the ſtem is very much decayed, and hollow, it will be neceſſary to open the ground and examine the roots; then proceed as directed for hollow Peach-trees; [*See* PLATES II. and V. which ſhew the manner of preparing hollow trees, and alſo the growing of the wood].

Some months before the publication of the "Obſervations on the Diſeaſes, &c. in Fruit and Foreſt Trees," I had tried the Compoſition in a liquid ſtate, but did not think myſelf warranted to make it public until I had experienced its effects through the Winter. The ſucceſs anſwered my moſt ſanguine expectations; and I have uſed it in that way ever ſince. By uſing the Compoſition in a liquid ſtate, more than three-fourths of the time and labour is ſaved; and I find it is not ſo liable to be thrown off as the lips grow, as when laid on in the conſiſtence of plaſter: it adheres firmly to the naked part of the wound, and yet eaſily gives way as the new wood and bark advance.

The firſt time that I tried the Compoſition in a liquid form was upon an elm which had been planted about twenty years. It had been very much bruiſed by the roller, had ſeveral cavities in it, and was very much bark-bound beſides. Having prepared the wounds, and applied the Compoſition with a painter's bruſh, I took my knife and ſcarified the tree in four places; I alſo ſhaved off, with a draw-knife, all the cankery outer bark, and covered the whole tree with the Compoſition, ſhaking the powder of wood-aſhes and burnt bones all over it. A very heavy rain began in the evening and continued all night; yet, to my great ſurprize, in the morning, I found that only ſome of the powder, which had not had time to dry and incorporate with the Compoſition, was waſhed off. I now repeated the powder, and, without any thing more being done to the tree, the wounds healed up and the bark was reſtored ſo completely, that, three years ago, it could hardly be diſcerned where the wounds had had been. The ſcarifications had alſo diſappeared. Some of the wounds were thirteen inches long, eight broad, and three deep. Since the time when it was ſcarified, the tree has increaſed ten inches more in circumference than a healthy tree planted at the ſame time with it about ſixteen feet diſtant, which was not ſcarified.

SUPPLEMENT.

SUPPLEMENT.

Succeſs of ſeveral Experiments, ſince the Publication of "Obſervations on the Diſeaſes, Defects, &c."

SINCE I publiſhed my "Obſervations on the Diſeaſes, Defects, and Injuries in Fruit and Foreſt trees," I have been aſſiduous in making experiments for the ſake of improvement. A great many hollow trees that had, when I took them in hand, little more than the bark remaining ſound, have within theſe few years been entirely filled up; others, that were headed down within a few feet of the ground, have their ſtumps now completely covered by the leading ſhoot, forming handſome trees; and the places where they were headed are only diſcerned by a faint cicatrix. Of a great many, I ſhall only particularize a few inſtances.

A Lime-tree, about eighteen inches in diameter, whoſe trunk was decayed and hollow from top to bottom, to which, after cutting out the decayed wood, I had applied the Compoſition about ſixteen years ago, was cut down laſt year on purpoſe to examine the progreſs it had made in the interior part, and was found entirely filled up with new ſound wood, which had completely incorporated with what little old wood remained when I firſt took it hand. The body of this tree I had cut in ſhort lengths, which I have now in my poſſeſſion, to ſhew to any gentleman who wiſhes to be convinced of the fact. An old Elm whoſe inſide was totally decayed, and out of which, at different times, were taken two large cart loads of rotten wood, has made ſhoots upwards of twenty feet high in the courſe of ſix years. Another Elm, on the Palace green, which was headed about twenty feet from the ground, has produced a ſhoot forty-ſix feet high, and five feet nine inches in circumference. A Lime, cut down near the ground, has now a ſhoot twenty feet high, which entirely covers the ſtump, forming a fine tree twenty-one inches in circumference. A Sycamore treated in the ſame manner is now thirty feet high, and twenty-ſix inches in circumference. Another is thirty feet high, and two feet in circumference. Theſe are now fine thriving trees, and the cicatrices hardly diſcernible.

A Horſe-Cheſnut headed down has produced, from its hollow ſtump, four fine ſhoots, one of which is cut down; the other three are upwards of thirty feet high, and one of them is twenty-ſix inches in circumference. Two of the remaining three are to be cut down, leaving only one to form the body of the tree. A Lime, whoſe hollow part is eleven feet high, is alſo filling up; the tree is a foot in diameter. A decayed part, four feet high and twenty-eight inches broad, in a large Elm, is now filling up rapidly with ſound wood. About two feet and a half in length on one ſide, which was for ſome time left to nature, ſtill continued to decay till the Compoſition was applied: new wood and bark are now forming. An Elm, at the back of the old fruit-room, near the garden wall, which was entirely hollow, was alſo headed down: the new head now ſpreads about twenty-four feet, and is eighteen feet high. Another large hollow Elm near the laſt was headed down; it afterwards produced a ſhoot ſixty feet high, and three feet and a half in circumference: the hollow was upwards of two feet in diameter. There are a great many other Elms, ſome of which had wounds ten feet long and two feet broad, now entirely filled up; beſides many Sycamores, Oaks, and other foreſt trees, all reſtored to a flouriſhing ſtate, by having the dead wood cut out and the Compoſition applied. An Oak that was headed

down

down about ſix years ago is repreſented in PLATE XII.

In hollow trees, the rotten and decayed wood muſt be cut out at different times, as the new wood comes in contact with it; but great care muſt be taken not to cut out too much at once, but to leave enough to ſupport the tree and prevent it from being blown down by high winds, till the new is ſtrong enough for that purpoſe: the remainder may then be cut out.

A number of inſtances of the ſucceſs attending my method of pruning and training might be adduced; but I ſhall notice only the following.

Mr Aberdeen, gardener to John Sullivan, eſq. at Richings near Windſor, has followed it for ſome time with great ſucceſs both in the houſe and on the natural wall.

Having heard for ſeveral years of the very fine and large crops that were produced in the forcing-houſes belonging to John Julius Angerſtein, eſq. at Woodland-houſe, on Blackheath, I was induced to take a journey thither, in company with John Wedgwood, eſq. to ſee what method was purſued to obtain ſuch crops. On enquiry, Mr. Stuart, the gardener, candidly told me, that ſeveral years ago he had been at Kenſington Gardens, where he ſaw my method of pruning and training, was convinced of its advantages above the old, and had adopted it with great ſucceſs. Indeed, there were, at the time I was there, the fineſt and largeſt crops of Grapes that I had ever ſeen in any forcing-houſes. Two houſes, in particular, were covered from top to bottom with fine Grapes, and the Vines trained in the ſerpentine manner.

John Wedgwood, eſq. of Cote Houſe near Briſtol, a gentleman who is much attached to gardening and planting, tells me, that he has practiſed my mode of pruning and training fruit-trees, particularly Peaches and Nectarines, in his houſes; and that he is highly pleaſed with the method, which has been attended with great ſucceſs.

Lord Frederick Campbell has lately favoured me with a liſt of eighty-five fruit-trees, of different kinds, that were headed down in his gardens at Coomb-bank in Kent, in the years 1798 and 1799; and afterwards trained and pruned according to my method: many of them, before heading down, were in a very cankery, unfruitful ſtate, and overgrown with moſs; theſe are now in a fruitful, healthy, and flouriſhing condition; ſome of the Eſpaliers have made ſhoots from two to three yards long, and upwards. Theſe trees were cut and prepared by Mr. Williams, who had been for ſome time accuſtomed to my way of treating ſuch trees, and whom I recommended to his Lordſhip as a gardener. Theſe trees are very proper patterns for any gentlemen in the neighbourhood, who wiſh to give the Compoſition, and method of training and pruning, recommended in this Treatiſe, a fair trial.

Several ſucceſsful trials have alſo been made at the Duke of Dorſet's Seat, at Knowle in Kent, at Hatfield Houſe, the ſeat of the Marquis of Saliſbury, and at a great many other places; and experiments are now making at Sir Henry Strachey's, at Rook's Neſt, near Godſtone, in Surry.

ALTHOUGH I do not mean to enter at large on the culture and management of foreſt-trees; yet as the following obſervations on raiſing Oaks, and directions for planting Cheſnuts for underwood, may be of conſiderable ſervice, I ſhall, without any further apology, lay them before my readers.

The best Way of raising Oaks.

It is a generally received opinion, that when an Oak loſes its tap-root in tranſplanting, it never produces another; but this I have proved to be a miſtake, a miſtake, by an experiment which I made on a bed of Oak plants in the year 1789. I tranſplanted them into a freſh bed in the forementioned year, cutting the tap-roots near to ſome of the ſmall ſide-roots or fibres ſhooting from them. In the ſecond year after, I headed one half of the plants down, as directed for Cheſnuts, and left the other half to nature. In the firſt ſeaſon, thoſe headed down made ſhoots ſix feet long and upwards, and completely covered the tops of the old ſtems, leaving only a faint cicatrix, and had produced new tap-roots upwards of two feet and a half long. One of theſe trees I left at the Land Revenue Office, for the inſpection of the Commiſſioners, and to ſhew the advantage of tranſplanting and heading down young oaks, when done in a proper manner. By this mode of treatment they grow more in one year than in ſix when raiſed in the common way. The other half of the plants, that were not headed down, are not one fourth the ſize of the others. One of the former is now eighteen feet high, and, at ſix inches from the ground, meaſures fifteen inches in circumference; at three feet from the ground, ten inches; and at ſix feet, nine inches and a half; while one of the largeſt of the latter meaſures only five feet and a half high, and three inches and three quarters in circumference, at ſix inches from the ground. This is a convincing proof, that tranſplanting and heading down Oaks is the moſt ſucceſsful and advantageous way of treating them; and by it they are ſooner out of danger from cattle, as well as from vermin, which are frequently very injurious to young trees.

Of raiſing Cheſnuts for Underwood.

As the Cheſnut is the beſt and moſt durable wood for ſtakes, hop-poles, &c. I ſhall give ſome directions how to plant them to the beſt advantage for copſe wood.

For this purpoſe, the ground ſhould be trenched, or ploughed, and well ſummer-fallowed. After the fall of the leaf, plant the young trees in the Quincunx order, in rows ſix feet apart, and at the diſtance of ſix feet in the rows from plant to plant. If you are forming large plantations, the moſt expeditious way will be to plant after the plough, treading the earth firmly about the roots of the plants. It will be neceſſary to form baſins round the plants on purpoſe to mulch them, if it ſhould happen to be a dry ſeaſon the firſt Summer after planting.

It may, perhaps, be a ſaving of time to put the plants in looſely at firſt, that you may be able to keep up with the plough, and to return afterwards to tread the mould, and form the baſins for mulching.

When the trees are become fit for poles, every other one may be cut down almoſt cloſe to the ground, thoughout the plantation; always obſerving to cut in a ſloping manner, and as near to an eye as may be. Thoſe that you intend for timber ſhould be left in every other row, which will leave them twelve feet apart every way: but if the ſoil be rich and deep, it may be neceſſary to leave them twenty-four feet apart. In many counties, particularly Hertfordſhire, the underwood is more valuable than timber; in that caſe it will be more judicious to leave but few trees for that purpoſe: in the mean time the underwood will amply repay you for the expence of planting, &c. beſides the rent of the ground, while at the ſame time you have a ſufficient crop of timber on the ground. In Kent, they generally plant out Cheſnuts and Aſh for hop-poles at three years old, and cut them fourteen years after, which makes, in all, ſeventeen years before they are fit to cut; and they bring from one guinea and a half to two guineas per hundred; but if they were raiſed from large ſtools, properly cut, and the Compoſition applied, they would be fit for cutting in leſs than one third of that time; and of courſe, the value of the land would be tripled.

LETTERS

ON THE

EFFECT OF THE COMPOSITION IN ALL CLIMATES.

THE following letters, &c. are inſerted to ſhew that the Compoſition, when properly applied, is found to be equally efficacious in all climates, ſoils, and ſituations. Indeed, all who have given it a fair trial are ſo fully convinced of its utility, that many noblemen and gentlemen have ſent their gardeners to me for inſtructions. The Chevalier D'Almeida, the Portugueſe Ambaſſador, had a perſon ſent from Portugal for the ſame purpoſe; and ſome Poliſh noblemen, who had ſeen the trees in Kenſington Gardens, were ſo fully convinced of the great advantage to be derived from the application of the Compoſition, as to ſend a man for inſtructions, that he might introduce the practice into Poland.

Copy of a Letter from the Œconomical Society of St. Petersburg.

Imperial Corps of Land Cadets, in St. Petersburg,
January 9, 1792.

SIR,

AS a member of the Œconomical Society of St. Peterſburg, his Excellency Count Anhalt ſolicits me to expreſs, in your own language, the pleaſure which the communication of your uſeful diſcovery has given him, and the learned body over whom he ſo worthily preſides. The Count has already taken the neceſſary ſteps, by deſire of the Society, to have your little diſſertation tranſlated and printed in the Ruſſian Language, in order to diffuſe the advantage it holds out, as widely as poſſible, over this vaſt Empire. I am happy in the opportunity his commiſſion offers, of expreſſing likewiſe individually the ſatisfaction I have received, as a countryman and lover of Botany, from the peruſal of your ſagacious application of the Chirurgical art to vegetation; and muſt own, that your extirpation of the diſeaſed parts, and the uſe of an unguent to ward off the noxious action of the air and humidity, during the exertions of nature to repair loſs of ſubſtance, and the languid circulation of the vegetable juices, appear to me highly judicious. The analogy in certain reſpects between the inferior order of *beings*, ſo particularly your care, and the more animated link of the great chain of Creation, ſeems to become every day more and more apparent. Nay, if we are to credit the ingenious Author of the Philoſophy of Natural Hiſtory, lately publiſhed in Edinburgh, it is not a little evident; and indeed the great number of curious facts and obſervations which he has brought together render his phraſe, which I have uſed above, much leſs improper than it would have otherwiſe appeared on the face of the caſe. All theſe conſiderations then make me ſee, with the more pleaſure, the ſagacious application of at leaſt one branch of the healing art to certain diſeaſes of vegetables, to the advantage of the world in general, and the Britiſh Navy in particular, which muſt gain infinitely by the preſervation and health of Britiſh Oak, unrivalled for the noble purpoſe to which it is applied.

I have ſtill to congratulate you on your becoming, ſo deſervedly, a member of our Society; for ſure no treatiſe ever laid before us promiſed a wider field of public and private Œconomy, and of courſe none ever came more immediately under the ſpirit and purport of our inſtitution.

I am, Sir, with hearty wiſhes for the ſucceſs and extended range of your purſuit,

Your moſt obedient, humble Servant,

(Signed) MATTHEW GUTHRIE.

To Mr. Forsyth, Kensington.

P. S. As the extremes of our climate may produce caſes which are not likely to happen in your temperate iſland, Count Anhalt will be happy to ſee more obſervations on ſuch accidents in any future letter you may addreſs to the Society. A paper of mine on the Ruſſian climate, in the ſecond volume of the Philoſophical Tranſactions of the Royal Society of Edinburgh, may probably afford you all the information neceſſary to judge of what modification your ſyſtem may require in this country, although I do think it applicable every where, with poſſibly ſome little alteration in the conſiſtence of your plaſter, to ſuit extremes of heat and cold. This letter being of a public nature, intended to teſtify the ſenſe of the Œconomical Society of Peterſburg, on your uſeful diſcovery, you may make what uſe of it you pleaſe.

Copy of a Letter from George Sulivan Marten, Esq.

Enston, Oxfordshire, July 30, 1800.

SIR,

UNDERSTANDING there exiſts ſome doubt how far your vegetable plaſter anſwers in hot climates, I cannot in juſtice heſitate to inform you, that it was in conſtant and ſucceſsful uſe not only in my own garden in the diſtrict of Trinſivelly, four hundred miles South of Madras, but alſo in the Company's Cinnamon Plantation which I had the pleaſure of forming there, and where, from the method of cultivating that ſpice, the trees are always cut down to ſtumps. Your plaſter at theſe times was always applied, which ſtopped the bleeding, and haſtened out the ſhoot (from whence the beſt Cinnamon is taken) much quicker than the former mode (and which is ſtill practiſed in Ceylon I believe) of heaping the earth over them. Nor was my experience confined; for, when I quitted India in October 1798, I left one hundred and fifty thouſand trees and plants in the Trinſivelly Plantations, all of which I had planted from the ſeed of two trees brought from the Iſland of Ceylon by Mrs. Light, which are yet flouriſhing, I dare ſay, in the Commercial Reſident's garden.

I likewiſe applied your plaſter with equal ſucceſs to the fruit-trees of the country. But to an old Pumbilmos, or Shaddock tree, which was almoſt throughout decayed, and which I had to fill up with the plaſter after the dead wood was taken out, it produced wonderful renovation. I derived too much benefit from this Compoſition to finiſh without aſſuring you, that I will with much pleaſure give you any further information as to its ſucceſs in hot countries that came within my obſervation during the uſe of it for ſeveral years in the diſtrict of Trinſivelly.

I am, Sir,

Your moſt obedient Servant,

(Signed) GEORGE SULIVAN MARTEN.

To Mr. Forsyth.

Copy of a Letter from John Wedgwood, Esq.

Cote House, Nov. 14, 1800.

DEAR SIR,

WHEN you were with me you expreſſed a wiſh to have the number of Peach and Nectarine trees which I had on my walls that had been dreſſed with your Compoſition. Theſe trees were part of a ſet which I bought in a lot, and which had been left to grow rude againſt an old wall, ſo that they appeared to be gone paſt all cure. Many were eaten up with the canker, and many were become ſo naked at the bottom that they gave but little room to imagine they could be brought into any form. I planted them againſt my walls in the beginning of the year, where they were left unpruned till the middle of May. The gardener then gave them a ſevere cutting in, and, as he went on, conſtantly dreſſing them with your Compoſition, carefully eradicating all the canker. I can now ſafely ſay, that they are as free from canker as any trees I ever ſaw, and full of fruit-bearing wood, many of them brought into excellent form, and all of them, except ſome few which died in the Summer, promiſing to make very uſeful and profitable trees; ſo that if I had occaſion to new-ſtock my walls, I ſhould as willingly purchaſe another ſuch lot as buy regular trained trees from a nurſery. Provided the roots are good, I am convinced from experience, that the older the tree the more profitable it will be, as in the caſe of the trees above deſcribed; all the young ſhoots are covered with bloſſom buds in great profuſion.

The following is the liſt of the trees, and the aſpects of the walls on which they are planted.

19 Peach and Nectarine trees on a new wall by the hot-houſe, Eaſt aſpect.
16 do. . . . do. . . on another, Eaſt aſpect,
19 do. . . . do. . . on the ſame aſpect.
5 do. . . . do. . . on a South aſpect.
2 do. . . . do. . . on another South wall.
4 do. . . . . on another South wall.

65 in all.

Theſe are excluſive of many trees that were on the walls before, and which have been much benefited by being dreſſed with your Compoſition. I am ſo fully aware of the excellence of the Compoſition, that I do not permit the gardener to prune any plants without immediately uſing it. If you think theſe remarks can be of any ſervice, you have my permiſſion to make any uſe of them.

I am, dear Sir,

Yours ſincerely,

(Signed) JOHN WEDGWOOD.

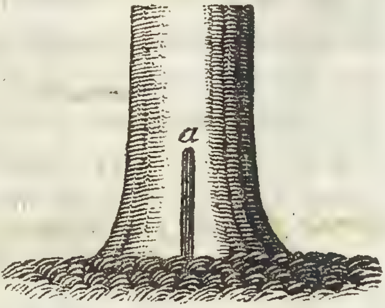
Extract of a Letter from Thomas Davis, Esq. Author of the Agricultural Survey of Wiltshire.

June 28, 1801.

"I WAS happy in having an opportunity the other day of ſhewing the effects of your plaſter (in recovering the bark of Oak-trees of 4 or 500 years old, which had begun to rot upwards from the ground, and is now recovering downwards very rapidly,) to *Lord Spencer*, who was both pleaſed and aſtoniſhed with it.

"You may at any time refer to *me* for proofs if you want them. I made a bold experiment ſeven years ago on an Oak-tree 40 feet high and 16½ feet round, worth £. 80. at leaſt to a *Carpenter* to cut to pieces, and ſuch a tree as the King has not ten in his dominions. There was a craze in the ſide of it, which looked like a ſhake, and ſpoiled its beauty. I cut out the bark on each ſide the fiſſure, ſo as to make the opening ſix or ſeven inches wide. I coated it well with plaſter, and it is now perfectly united and ſound.

"In the annexed Figure, *a* repreſents the Fiſſure which ſeparated the *Bark*, but did not effect the wood."



Directions for Heading down Orange-trees.

JUST as the manuſcript was going to the preſs, Mr. Rademaker, the Portugueſe Agent in London, called and told me, that he had received a letter from the Chevalier d'Almeida, the late Ambaſſador from Portugal at this Court, informing him, that on his return home he had found the Orange-trees on the Prince of Brazil's Plantations in a very unhealthy and decayed ſtate; and requeſting him to apply to me for ſome of the Compoſition, and a copy of the Pamphlet "On the Diſeaſes, &c. in Fruit and Foreſt Trees;" as he wiſhed to make a trial of it on the trees of that country.

Accordingly, I have ſent a caſk of the Compoſition, with directions for preparing the trees, and laying it on.

When it is found neceſſary to head down Orange-trees, I would adviſe not to cut them quite down to the ſtem; but to leave two or three inches of the branches; ſome more, ſome leſs: always remembering to cut near to a joint, and in ſuch a manner as to form a handſome head; and to apply the Compoſition immediately. In doing this, however, it will be neceſſary to leave a few young ſhoots to draw up the ſap. If the trees are infeſted with inſects, the ſtems muſt be waſhed with ſoap-ſuds and urine, and well ſcrubbed with a hard bruſh.

About twelve years ago the Orange-trees in the green-houſe in Kenſington-gardens were ſo much infeſted with a ſpecies of Coccus, that I was obliged to head them all down, and clean off the inſects as above directed; applying the Compoſition immediately after. Theſe trees throve amazingly; and in three years, without any bottom heat, the heads were as large as before they were cut; and they ſtill continue in a flouriſhing and fruitful ſtate.

I would adviſe to rub off the ſide-ſhoots, as directed for other fruit-trees, and to keep the heads thin of wood.

I thought it proper to inſert the above for he information of thoſe who have Orange-trees in this country, as well as for thoſe who have them abroad.

EXPLANATIONS

OF THE

ENGRAVINGS.

EXPLANATION OF PLATE I.

Fig. I.

Represents an old Apricot-tree, after the laſt pruning in Summer, in the fourth year after heading down. The lower part of the trunk is repreſented as covered with a rough bark, which muſt be pared off when it happens to be cankery.

a, a, a, a, The cicatrices of the four different years' heading, which ſhould be performed at the time of the Winter or Spring pruning.

b, b, b. Forked ſhoots which are laid in, in Summer, and cut off at *b* in the Winter pruning, that the leading ſhoots may be always left without forks.

As the ſmall ſhoots *c, c, c,* from the ſtem, advance, the larger forked ſhoots ſhould be cut out, as at *d, d, d,* to make room for them to be trained horizontally.

Fig. II.

Is an old branch of an Apricot trained up according to the old method, leaving above three fourths of the wall naked. Such branches ſhould be cut down as near to the place where the tree was firſt budded as poſſible, as at *e*, on purpoſe to fill the wall with fine new wood.

EXPLANATION OF PLATE II.

Fig. I.

An old hollow Green-gage Plum-tree the ſecond year after heading down. This tree was very much decayed, having only a few inches of ſound bark; many of the roots being alſo rotten and decayed, were cut off, and an inciſion made at *a*, which produced a freſh root.

b. The firſt heading, cloſe to a bud.

c, *c*. The new wood and bark growing over the hollow part *d*, which is covered with the Compoſition.

e, *e*, &c. Where the ſecond year's heading was performed.

ff. Where the foreright ſhoots are cut off during the Winter or Spring pruning.

g, *g*, *g*, &c. The fruit buds for next year, as they appear after the foreright ſhoots are cut off, as at *f*, *f*.

Fig. II.

A branch on a larger ſcale, to ſhew the manner of cutting thoſe foreright ſhoots which are full of fruit-buds. This ſhould be done at *b*, *b*, but not till the fruit is ſet; they afterwards form into dugs, as *i*, *i*.

Fig. III.

An old branch pruned in the common way, covered over with canker, and producing only ſmall weak ſhoots, leaving the wall moſtly naked.

EXPLANATION OF PLATE III.

Fig. I.

An old hollow Peach-tree, after the laſt nailing in Summer, which had been headed down at *a*, four years ago. The hollow is covered over with the Compoſition, and now nearly filled up. The heading muſt always be done as near to a bud as poſſible.

b, *b*, &c. Where the forked branches are to be cut, when the ſmall ſhoots *c*, *c*, &c. are far enough advanced, that theſe may be trained horizontally.

When a ſhoot has ſingle fruit-buds to the top, as at *d*, it muſt not be ſhortened, but laid in at full length; or, if not wanted, it muſt be cut clean out.

Fig. II.

A branch on a larger ſcale.

e, *e*. Are double flower-buds, with wood-buds between them; the ſhoots ſhould always be cut at ſuch; but never at a ſingle flower-bud, as at *f*; otherwiſe the ſhoot would die to the next wood-bud; and, if the pruning were done in a careleſs manner, would endanger the whole ſhoot. Thoſe above *f* are all wood-buds.

Fig. III.

A branch of an old Peach-tree pruned in the common way, which ſhould be cut at *g*, and the young wood will ſoon cover the wall.

EXPLANATION OF PLATE IV.

Fig. I.

An old Cherry-tree headed down at *c*. Before this its branches were covered with the gum and canker, as *Fig. II.*

The foreright ſhoots ſhould be tucked in, as directed for Pears; and at the fall of the leaf, or in the month of February, they ſhould be cut at *a*; theſe form the fruit-buds *b*, *b*, &c. all over the tree.

c, *c*, &c. The cicatrices where the leading ſhoot was headed in different ſeaſons.

d, *d*. The Compoſition applied where large limbs were cut off.

Fig. II.

A branch of this tree before it was headed down.

e, *e*, &c. Branches injudiciouſly pruned in Summer; which brings on the death of the ſhoot, and afterwards the gum and canker on the tree.

f, *f*, &c. The gum and canker in the laſt ſtage, which corrodes the whole tree if not carefully extirpated.

EXPLANATION OF PLATE V.

An old Cherry-tree, reſtored from two or three inches of live bark, taken from the wall, and planted out as a dwarf ſtandard: now very fruitful.

a, a. The cicatrices where it was headed down the firſt and ſecond time.

b. The hollow covered with the Compoſition, and now nearly filled up with ſound wood.

EXPLANATION OF PLATE VI.

Fig. I.

An old cankery Apple-tree headed down four years ago, now bearing great plenty of fine fruit.

a. Where it was firſt headed down.

b and *c.* Two wounds covered with the Compoſition, and now nearly filled up with ſound wood.

The part of the trunk below *a* ſhews the cankery ſtate of the bark; which rough cankery bark muſt always be pared off, otherwiſe it will infect the new.

Fig. II.

A branch ſhewing the method of keeping a regular ſucceſſion of bearing wood.

d. A branch, which has done bearing to be cut at *e*, and which is ſucceeded by the branch *f*; when that alſo is tired of bearing, it is to be cut at g, and will be ſucceeded by the branch *h*; and when that alſo is worn out, it is to be cut off at *i.* By proceeding in this manner, you will always be able to keep a regular ſucceſſion of fine bearing wood.

EXPLANATION OF PLATE VII.

THIS Plate repreſents an old decayed Pear-tree, with four ſtems, which was headed down, all but the branch *C*, and the young wood trained in the common way, or fan-faſhion.

A, A, A. Young wood producing the fine large fruit *B*.

C. An old branch pruned in the common way, having large ſpurs ſtanding out a foot or eighteen inches, and producing the diminutive, kernelly, and ill-flavoured fruit *D*, not fit to be eaten.

The two Pears *B* and *D*, repreſented in the Plate of their natural ſize, grew on the tree at the ſame time.

a, a, a, &c. Wounds in the ſtems of the tree, with the Compoſition applied, as they appeared when the edges of the bark began to grow over them.

EXPLANATION OF PLATE VIII.

Fig. I.

An old decayed Beurré Pear-tree headed down at *f*, and reſtored from one inch and a half of live bark.

a, *a*, *a*, &c. The fruit-buds for the preſent year.

b, *b*, *b*, &c. Thoſe forming for next year.

c, *c*, &c. The footſtalks of the fruit of laſt year, on which are forming buds for bearing in the ſecond year.

d, *d*, &c. The foreright ſhoots as they appear before they are cut off at *e*, in the Autumn or Spring pruning.

d. The manner of tucking in the foreright branches.

f, *f*, &c. Cicatrices of the different headings, which cauſe the leading ſhoot to produce horizontal ſhoots.

g, *g*. Large wounds, having the Compoſition applied, healing up.

Fig. II.

An old branch of the ſame tree before it was headed down, trained and pruned in the old way, with ſpurs ſtanding out a foot, or a foot and a half, from the wall ; and the rough bark, infeſted with a deſtructive inſect, which is deſcribed, and a method of cure given, in Chap. XXVIII. See Coccus, and Plate IX. *Fig. III.*

EXPLANATION OF PLATE IX.

Fig. I.

An old Bergamot Pear headed down at the cicatrix *a*, taken from the wall and planted out as a dwarf ſtandard.

b. A wound, covered with the Compoſition, where a large upright ſhoot was cut off, to give the leading ſhoot freedom to grow ſtraight.

Fig. II.

The different appearances of the inſect ſo deſtructive to Pear-trees, mentioned in the Chapter on Insects, under the head *Caterpillar.*

This inſect is incloſed in a caſe, and, when fixed on the leaf on which it feeds, appears as repreſented at *a*, *a*, *a*, which is about its natural ſize.

b. The caſe magnified.

c. The caſe, with the inſect in motion, magnified.

d. The inſect magnified.

e. The Moth.

f. The Chryſalis.

g. The Chryſalis magnified.

Fig. III.

The Coccus which infeſts Peach, Nectarine, and Pear trees.

a, a, a. The inſect, the natural ſize, on a branch of a Pear-tree.

b, b, b. The ſame magnified.

EXPLANATION OF PLATE X.

a, *a*, *a*, &c. The young bearing wood of a Vine trained in a ſerpentine manner, with the buds for the preſent year appearing. Theſe ſhoots are generally cut out in the Winter pruning, as low as *c*, *c*, *c*, &c. to produce wood for next year.

The ſhoots *b*, *b*, &c. produce fruit in the uſual manner, and alſo young wood for the following year, which muſt not be topped, but only have the ſide ſhoots picked off. Two or three of the ſtrongeſt young ſhoots from each of thoſe *b*, *b*, &c. will be ſufficient, and they muſt be laid in at full length.

EXPLANATION OF PLATE XI.

Fig. I.

Grafting in the rind, ſhoulder-grafting, or crown-grafting.

a. The ſtock grafted.

b. The manner of raiſing the bark to receive the cion or graft.

c. The graft prepared for inſerting.

Fig. II.

Cleft-grafting, ſtock-grafting, or ſlit-grafting.

d. The ſtock grafted.

e. The ſtock prepared for receiving the graft.

f. The cion ready for inſerting.

d, d, d. Different views of inciſions made for the purpoſe of obtaining young wood.

e. A young ſhoot coming out at the lower part of the inciſion.

Fig. III.

Whip-grafting, or tongue-grafting.

g. The ſtock grafted.

h. The ſtock prepared.

i. The graft prepared for inſerting.

Fig. IV.

Inoculating or budding.

k. The manner of making the inciſion in the bark.

l. The bud inſerted, and the bark laid over it.

m. A ſhoot ſhewing the manner of cutting off the buds.

n. A veſſel with a little loam, covered with wet moſs, to ſtick the lower end of the ſhoot in, to keep it moiſt till uſed.

o. A bud taken off, and ready for inſerting.

Fig. V. and VI.

Inarching, or grafting by approach.

p. Grafting on a ſtock in a pot.

q. Grafting on a ſtock growing near the tree from which it is to be grafted on.

r, s. The ſhoot and ſtock prepared.

t, t. Two branches inarched where the natural ones had failed, now properly united with the body of the tree; the lower parts being cut off.

u, u. Two branches lately inarched for the ſame purpoſe, and when properly united with the ſtem, are to be cut off at *u, u, u, u.*

w, x. The manner of preparing the ſtock and graft.

v. A natural ſhoot coming out where the branch was inarched the preceding year.

EXPLANATION OF PLATE XII.

THIS plate repreſents an old ſtunted Oak, which was headed down about ſix years ago. At that time it was full of wounds and blemiſhes, now nearly healed.

a. The place where the tree was headed, afterwards covered with the Compoſition.

b, b, b. Three young ſhoots produced ſince heading; there were ſeveral others, which were cut down as they advanced in growth; the two remaining ſide ones are alſo to be cut down, and only the middle one left, which will in time cover the wound *a*, and form a proper tree.

c, c, c. Remains of the old wounds, covered with the Compoſition, and now almoſt healed up.

EXPLANATION OF PLATE XIII.

Fig. 1. A tool for cutting out the dead and decayed parts of hollow trees. It has two wooden handles which may be of any convenient length.

2. Another tool, with one handle, for cutting out dead wood. This is made narrower than the former, and is to be uſed in places where *Fig.* 1. cannot be admitted.

3. A ſmall ſaw with double teeth, thin on the back, for cutting off ſmall branches, &c.

4. A long knife with a concave edge.

5. A pruning knife with a convex edge.

6. A tool in ſhape of a curry-comb for ſcraping moſs, &c. off the ſtems and branches of trees: one of the ſcrapers has teeth; the other is plain. The back of this tool, and the edges of the ſcrapers, are a little concave.

7. A large double-toothed ſaw for cutting off large branches.

8. A tool reſembling a hedge-bill for cutting branches, &c.

9. A ſmall tool with only one ſharp edge, to be uſed in places where *Fig. II.* cannot be admitted.

10. A knife, with two blunt edges, for ſcraping off rotten wood, &c. where the Compoſition is to be applied.

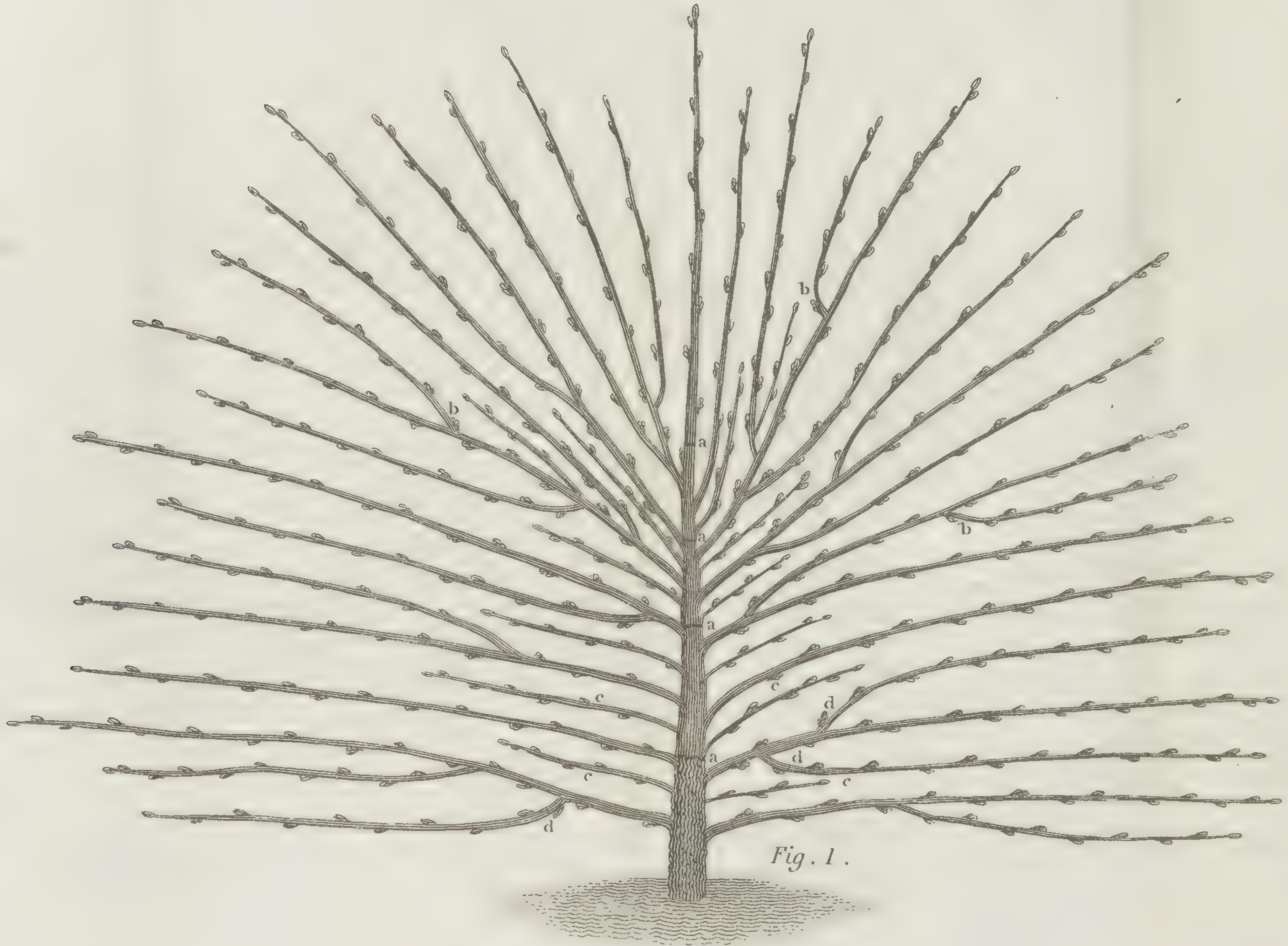
11. A large chiſel with a ſtrong plate of iron ſcrewed upon the face of it, like a double iron for a plane, to prevent its running in too far where the tree is croſs-grained.

12. A tool in form of a ſickle, without teeth. This is to ſcrape ſtems and branches of trees on the ſide next the wall.

N. B. The tools repreſented by *Fig.* 1, 2, 6, and 11, have handles of different lengths, to be uſed as occaſion requires.

Beſides the above-mentioned tools, it will be neceſſary to have an adze, and chizels and gouges of different forms and ſizes. Crooked chiſels like thoſe uſed by carvers will be found very uſeful in clearing ſmall wounds from dead and rotten wood.

AN APRICOT.



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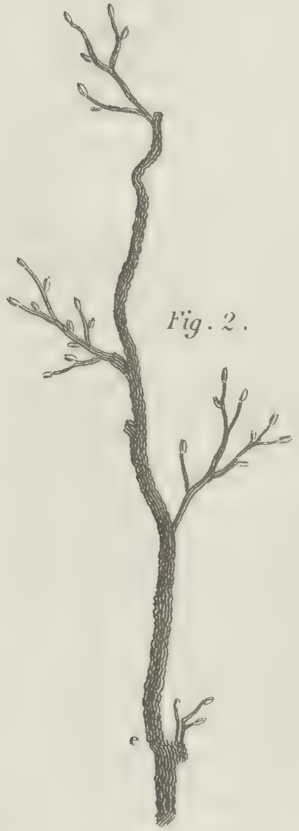

Fig. 2.

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A GREEN GAGE PLUM-TREE.

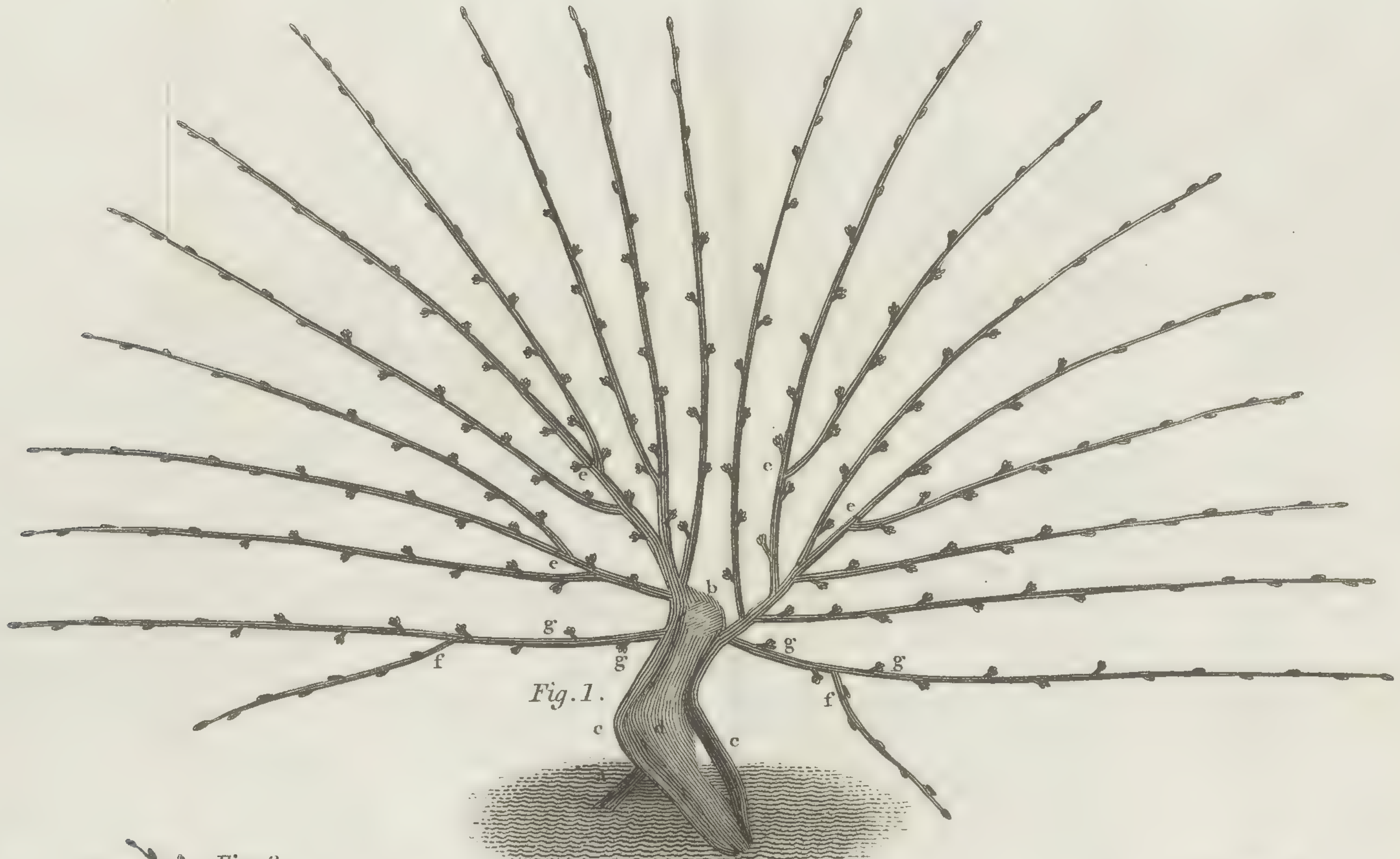

Fig. 1.

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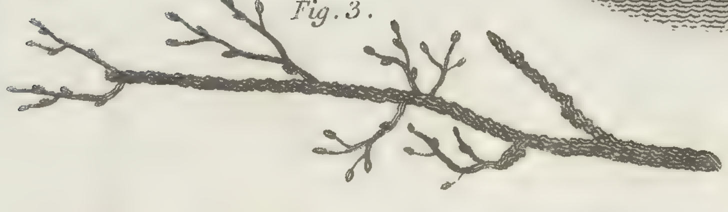

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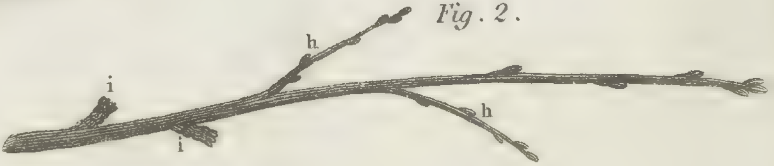

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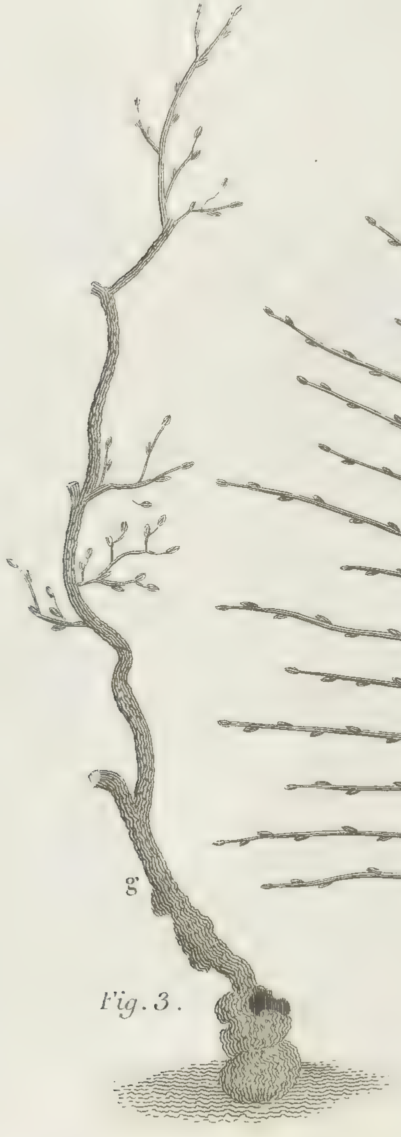
A PEACH.



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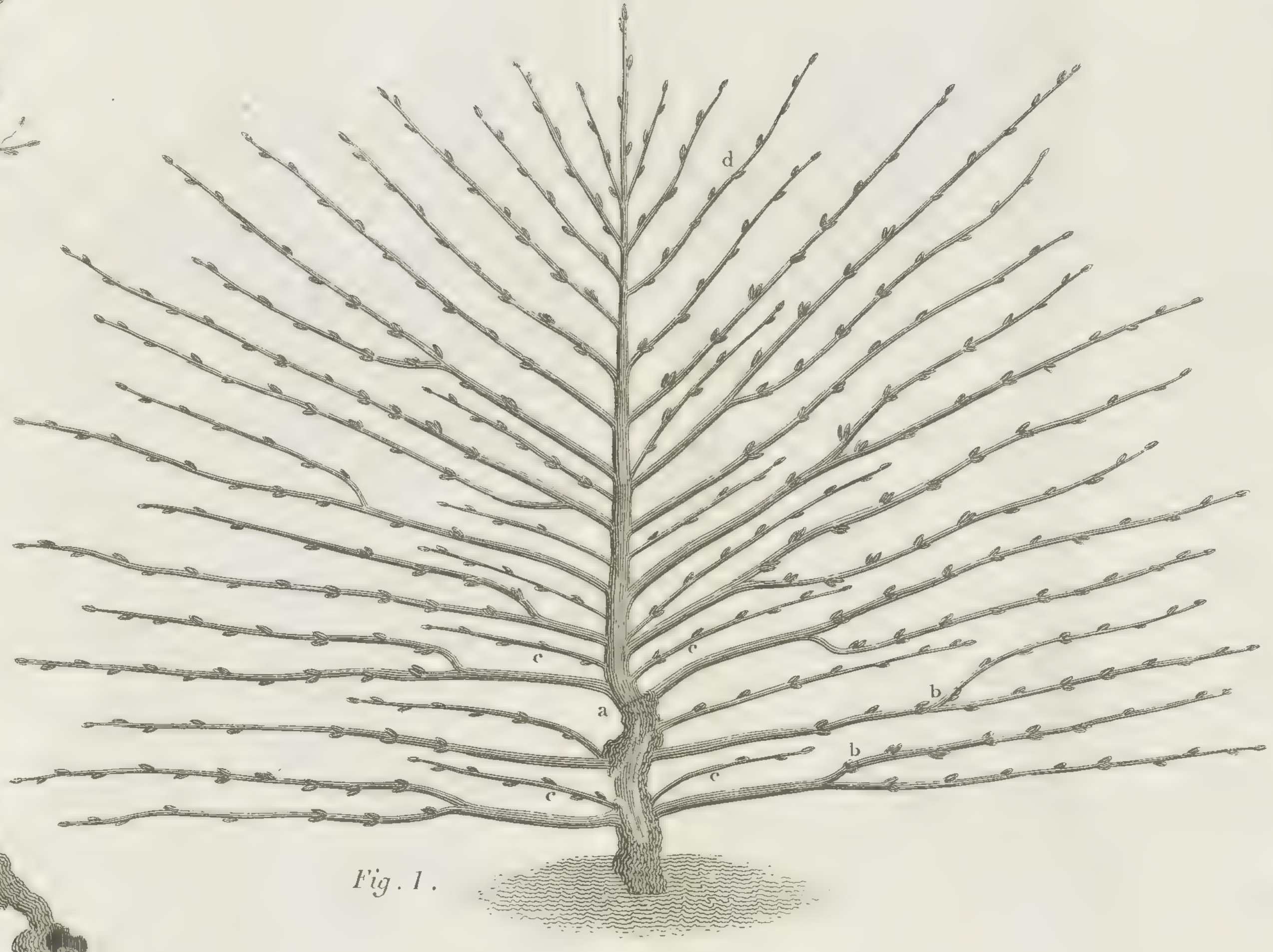

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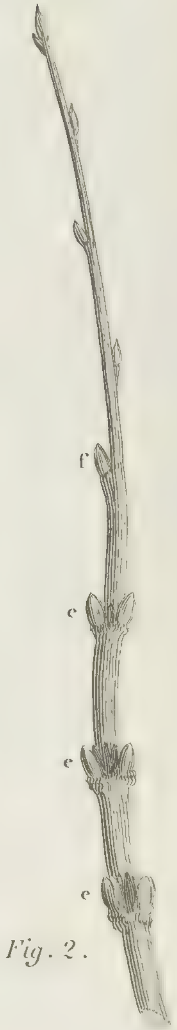

Fig. 2.

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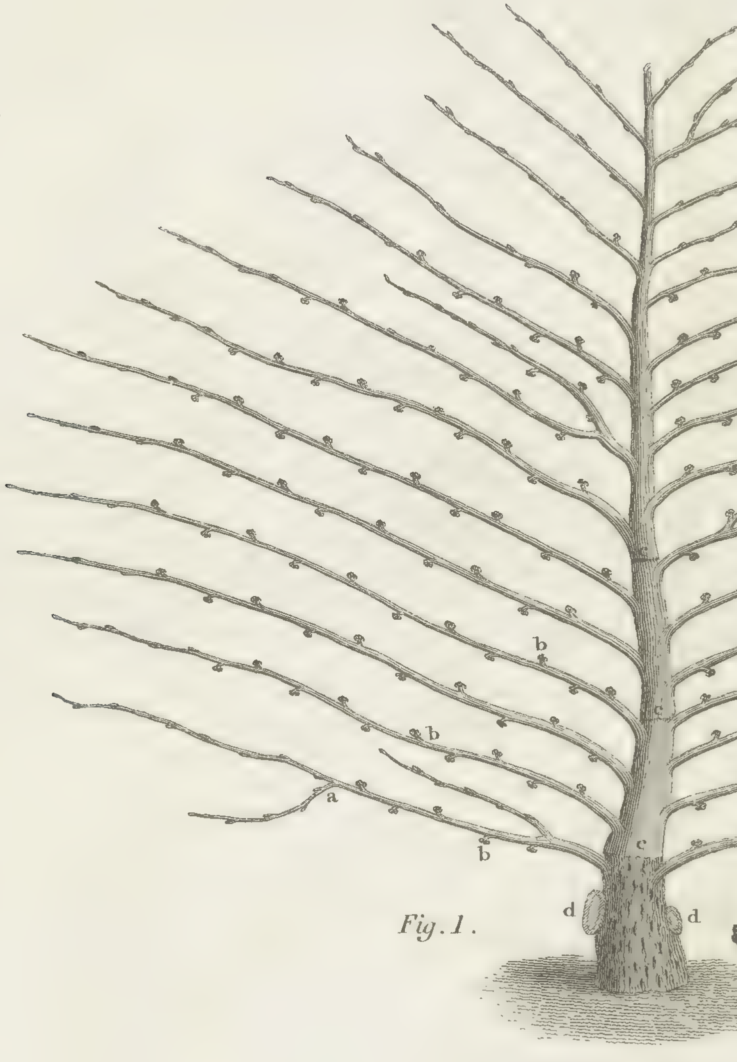
A DUKE CHERRY-TREE.



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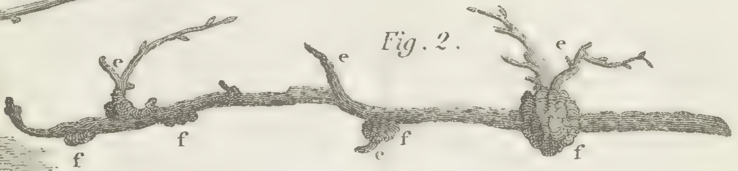

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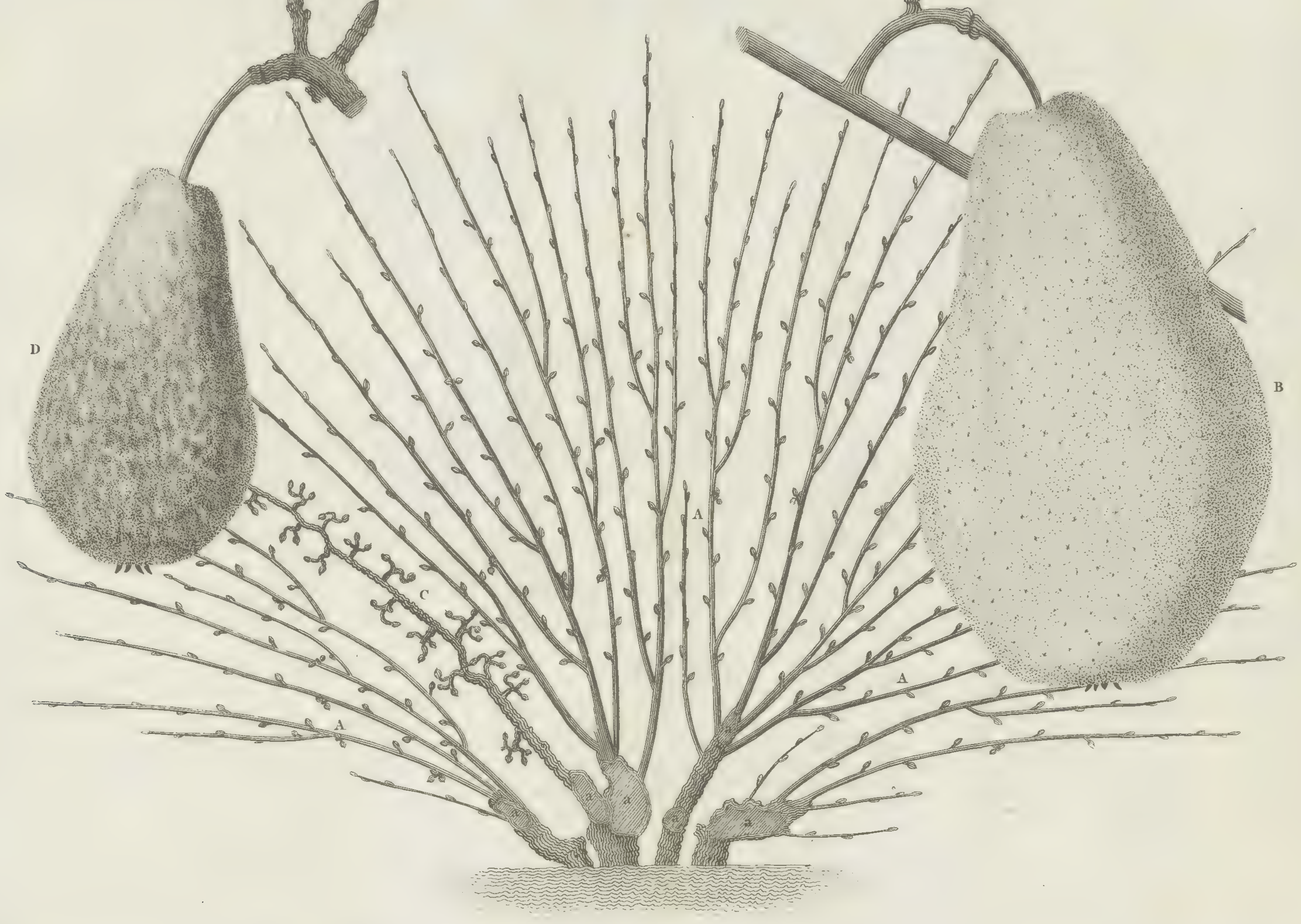
Plate VII.

PEAR.



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A BEURRE PEAR-TREE.

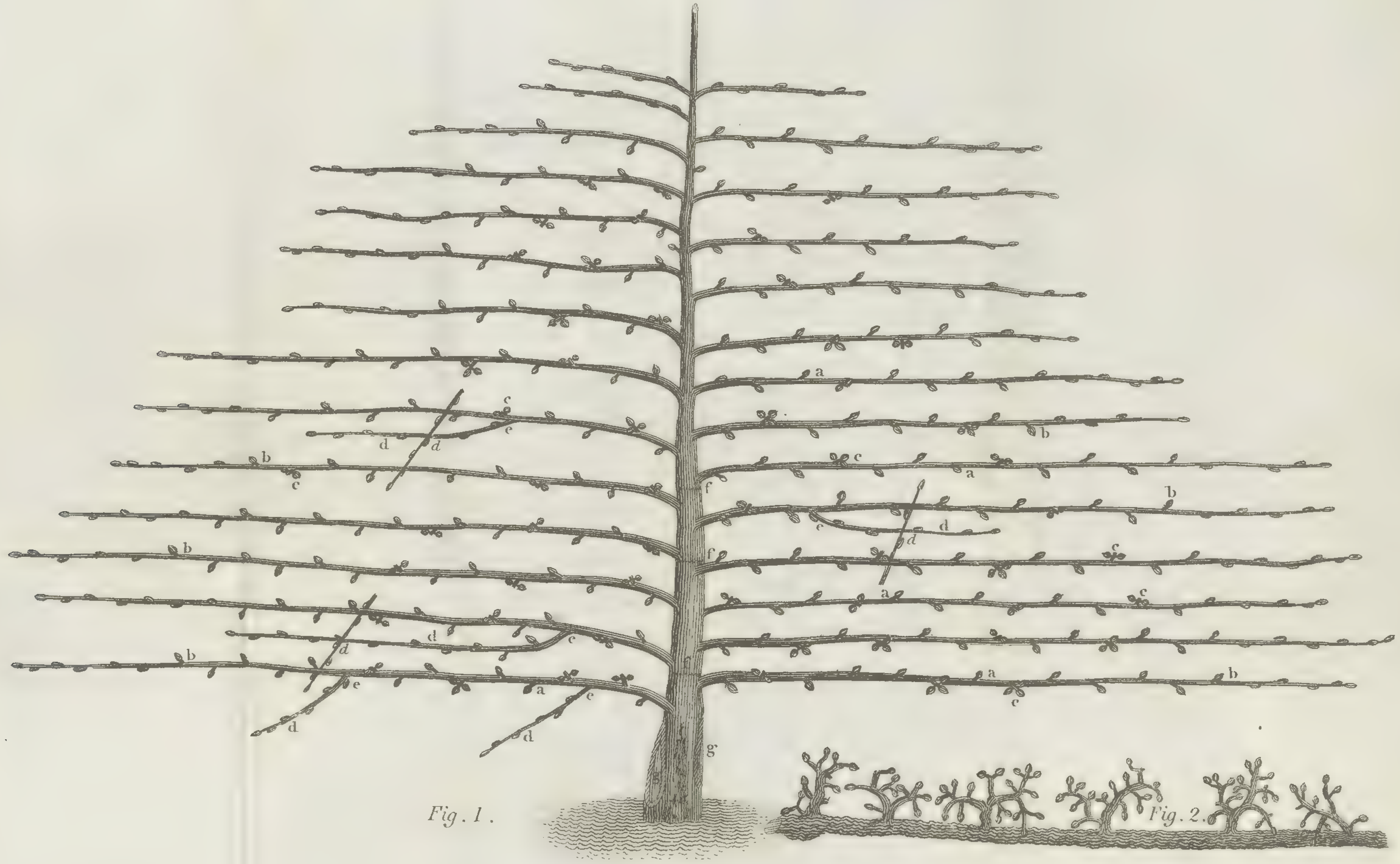

Fig. 1.

Fig. 2.

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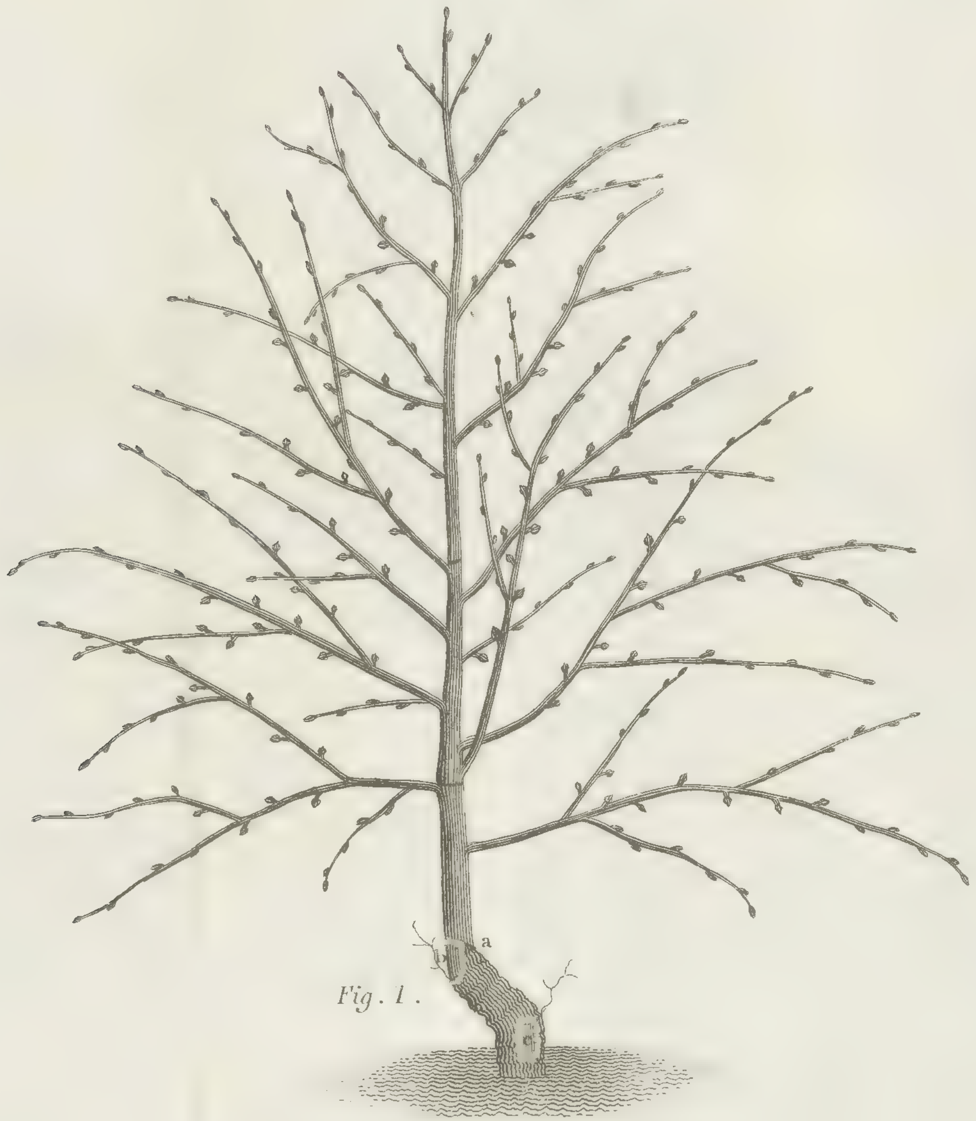
Plate VI.

A STANDARD APPLE-TREE.



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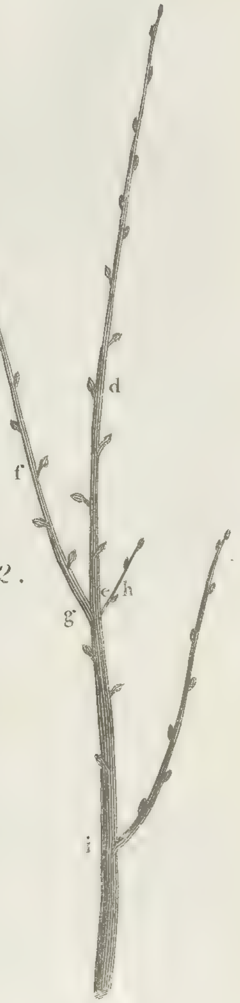

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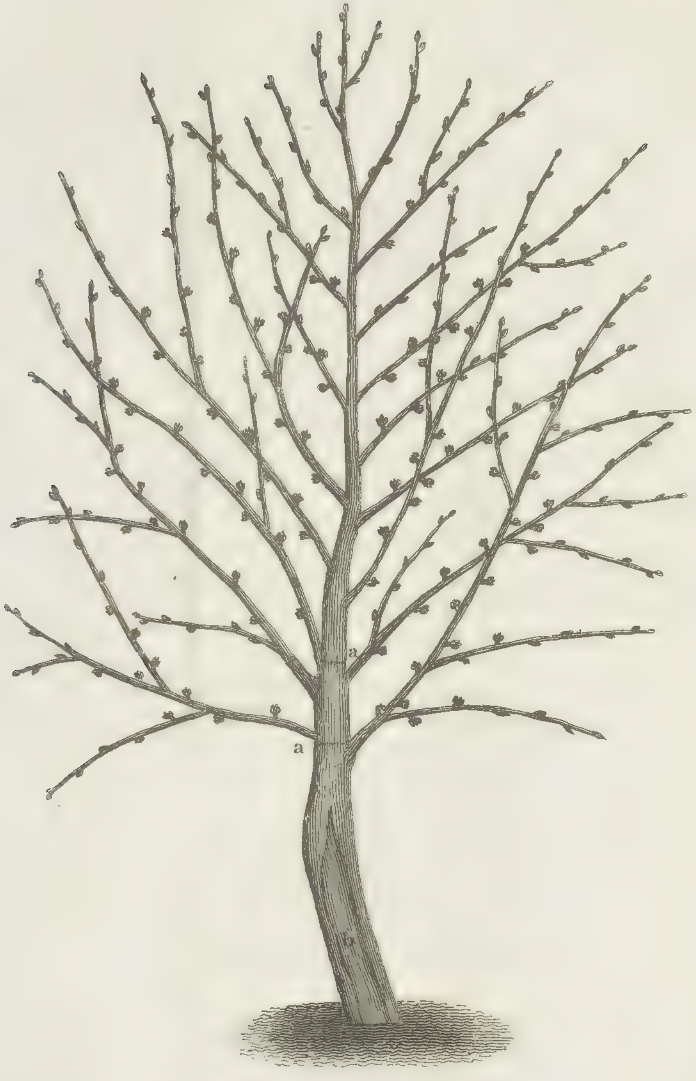
Plate V.

A STANDARD CHERRY.



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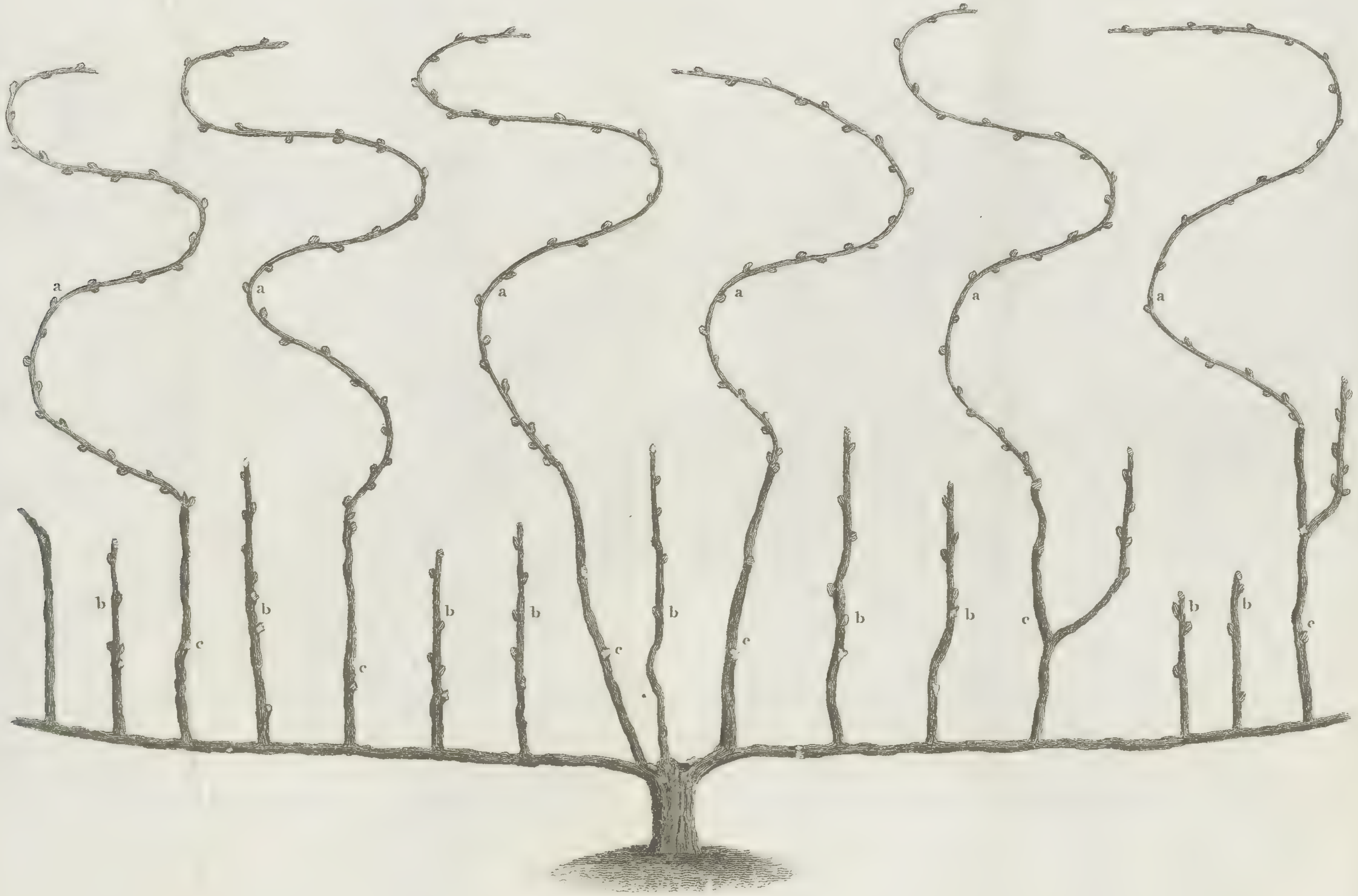
A VINE.



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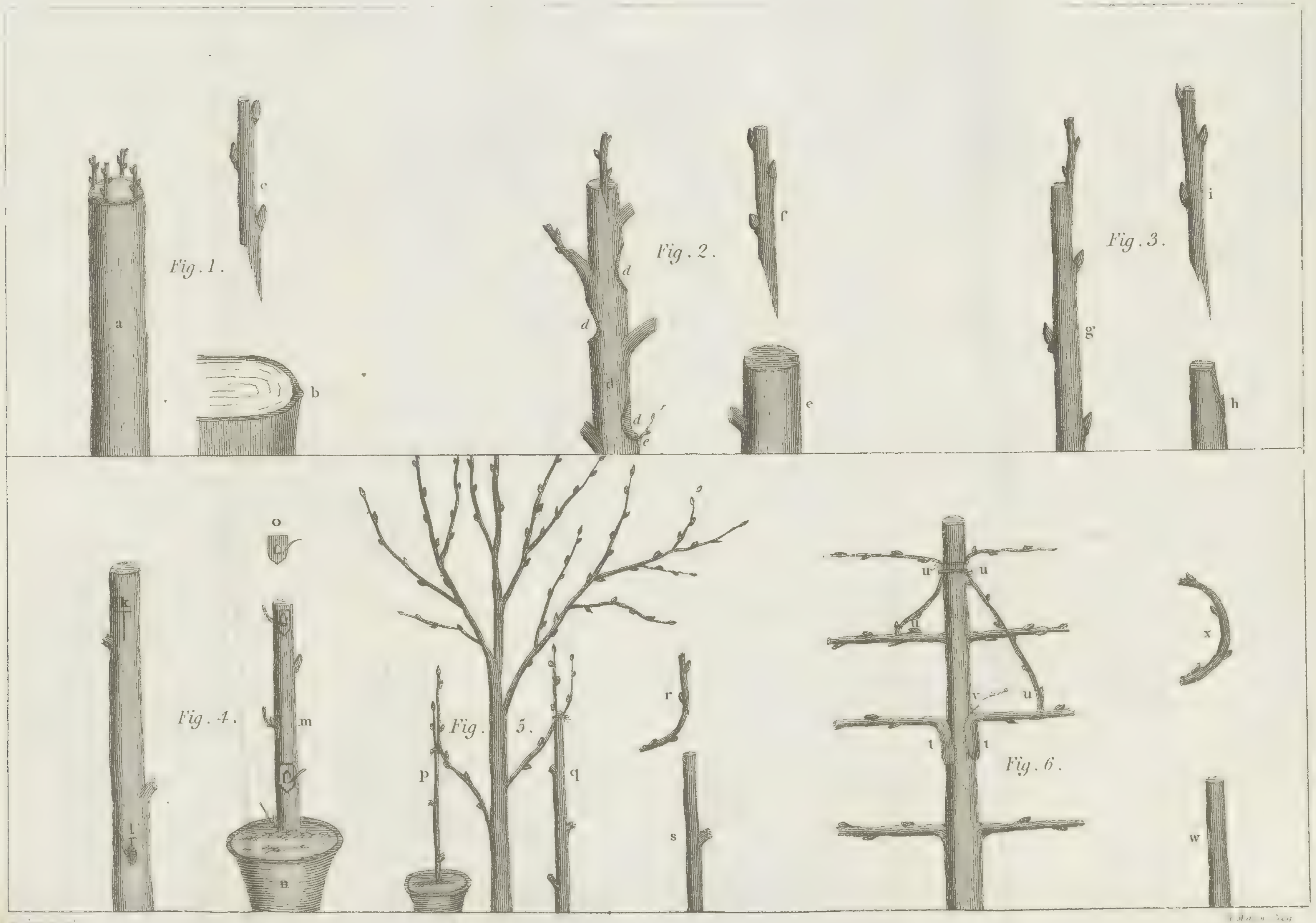

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Plate XII.

AN OAK.

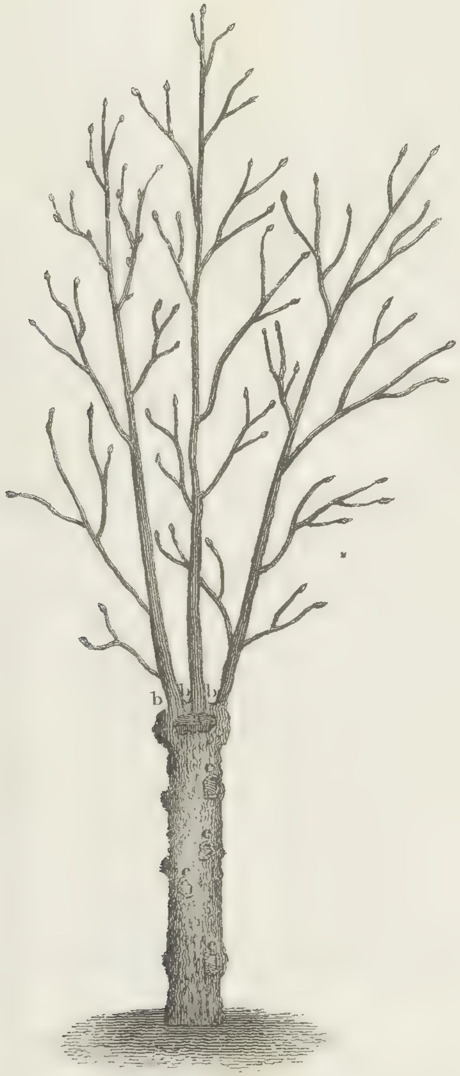

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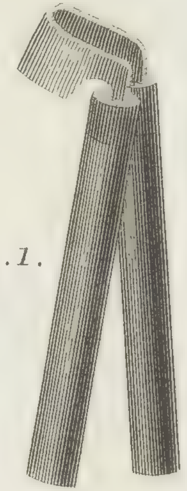
Plate XIII.

Fig. 1.



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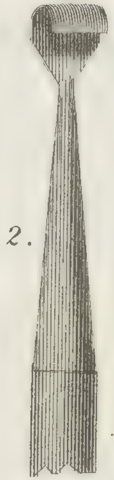

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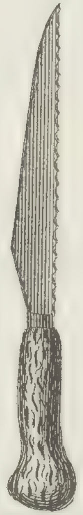

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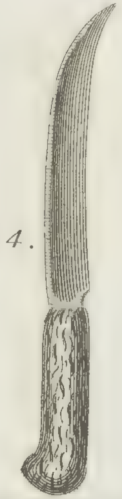

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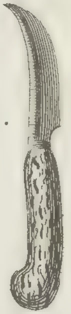

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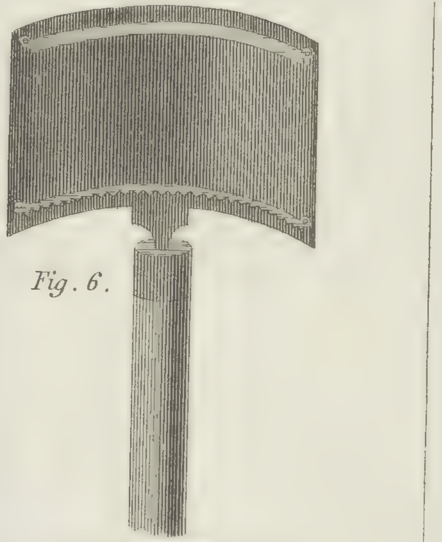

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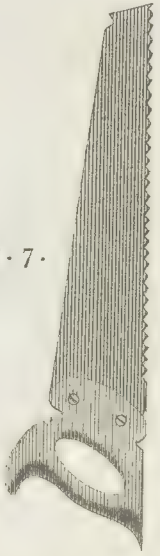

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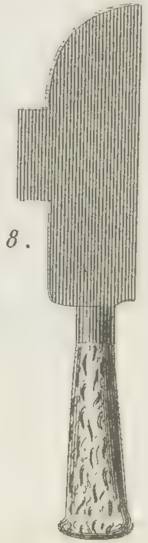

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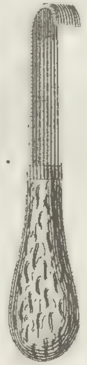

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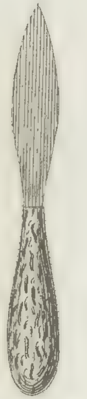

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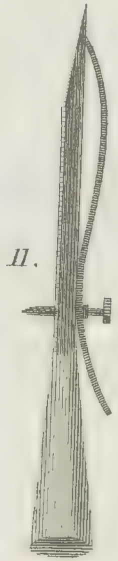

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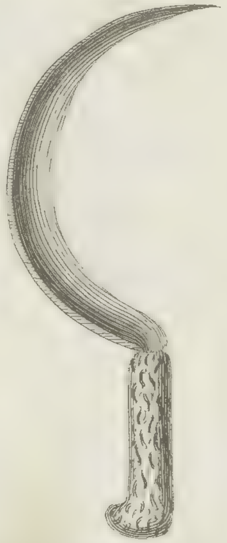

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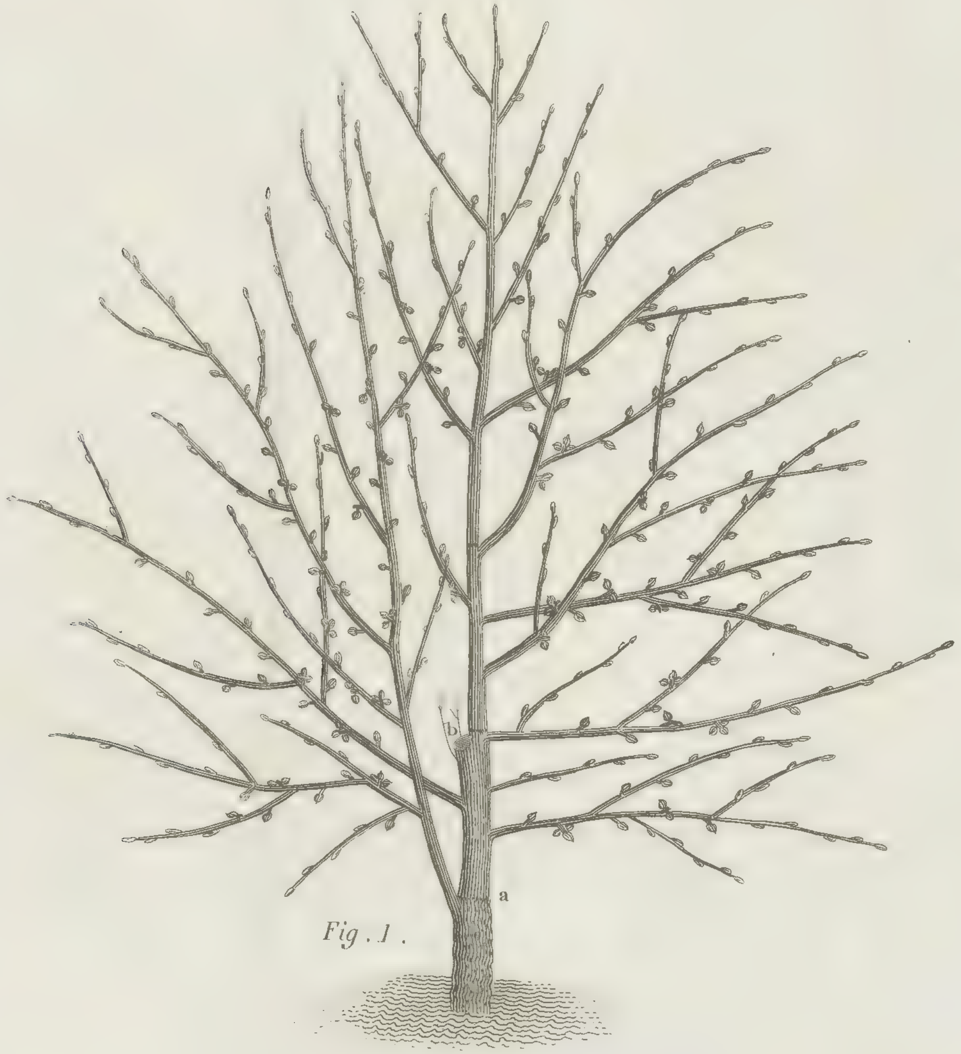
A STANDARD PEAR-TREE.



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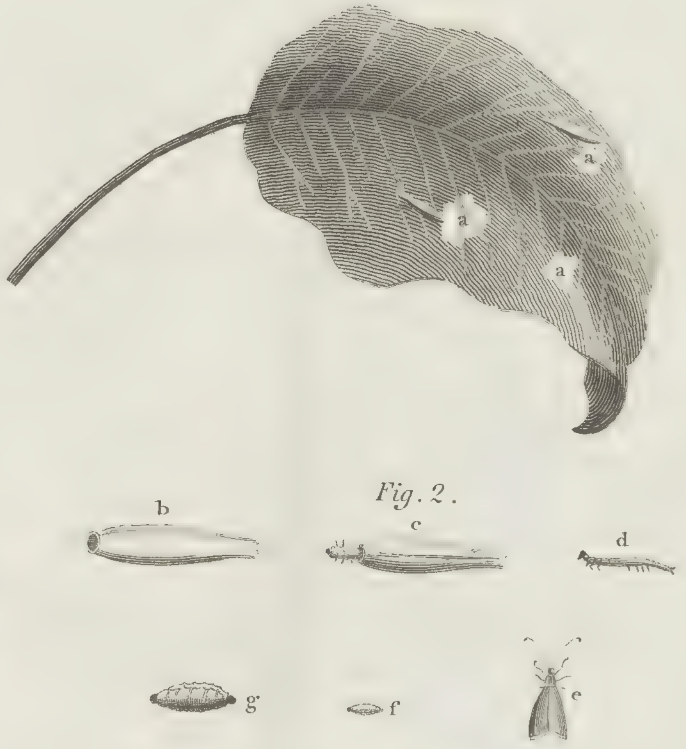

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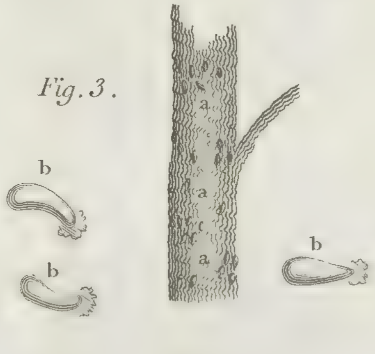

Fig. 3.

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